A SOCIAL NETWORK ANALYSIS OF

THE NEW TEACHER CENTER

MENTORING PROGRAM

By

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Abstract: The purpose of this qualitative study was to examine the patterns of mentoring relationships embedded in the New Teacher Center (NTC) mentoring program. The NTC program is a centralized mentoring program and the study sought to explore the patterns of relationships established in this program. Participants included novice teachers and their mentors participating in the NTC mentoring program from a large, urban school district in the Midwest. Data was collected through multiple sources, Social Network Analysis surveys, interviews, observations, and document review. The Social Network Surveys specifically focused on the professional support the novice teachers received through their relationships and the emotional support they received through their relationships. UCINET and NetDraw were used to analyze the Social Network Analysis surveys, and content analysis was used to analyze data obtained through interviews, observations, and document review. Findings revealed: 1) The majority of the novice teachers' network connections were for professional support. However, these relationships are not cohesive and unreciprocated. 2) While participants sought advice from their mentors, the NTC program had limited representation within the novice teachers' networks with minimal connection between and within the novice teachers. 3) Participants found their building-based relationships more convenient and easier to access than their mentoring relationships. 4) Most participants appreciated and benefited from their mentoring relationships, and supplemented the resources they received from their mentors with their building-based connections and external resources, such as social media, family, and friends. 5) While some social capital was generated between mentors and their teachers, these relationships were not being maximized to the full potential available within the mentoring program. The researcher concluded that novice teachers generated support through both formal and informal sources within their social networks and maintained stronger relationships with colleagues than with their mentor. While the centralized mentoring program delivered additional benefits, the program was not being maximized to its fullest potential, leading to potential resources being missed. These conclusions led to recommendations for reform efforts by school districts and recommendations for future research in this area.

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CHAPTER I

INTRODUCTION

Educational reform and the resulting heightened emphasis on accountability in the 21st century have caused an evolution in the role of the teacher. The prescriptive and punitive nature of mandated requirements, such as No Child Left Behind (NCLB, 2001) and Race to the Top (RTTT, 2013), place teachers under enormous pressure to enhance student performance on high stakes assessments, leaving little time for collaboration and collegial support (Croft, Roberts, & Stenhouse, 2016). With intense focus on student performance, these mandates fail to address other factors that enhance teaching effectiveness: teacher professional development, collaboration, and collegial support. In order to ensure effective teaching, teachers require ongoing professional development and resources to positively impact instruction and improve student outcome (DeMonte, 2013). NCLB was established as an opportunity to provide a more equitable educational experience for students and teachers. One of the requirements was to promote teacher commitment and competence by requiring schools to employ highly qualified teachers. The intention was to improve the teaching force with the belief that a highly-qualified teacher in every classroom would result in improved student performance.

Additionally, since the inception of NCLB and succeeding federal legislation, student performance has been measured by documented student scores on high stakes exams, and a trend in education has followed that links teacher performance to student outcome scores (Goe, 2007; Hinchey, 2010; Reback Rockoff, & Schwartz, 2014). This trend has resulted in demands for higher standards of preparation and, at the same time, must demonstrate teaching effectiveness based on student scores. Analysis of these high stakes mandates reveals that these mandates have caused unanticipated alterations to the teaching profession. Hanushek and Rivkin (2010) explained that applying student scores to evaluate teacher performance changes the dynamic of teaching as a profession by undermining the professionalism of teachers and disregarding the multitude of factors, both inside and outside of school, that influence student learning. Baker et al. (2010) cautioned against tying teacher evaluation to student test scores and further suggested that this practice is unwise and does not provide an accurate view of the teacher's classroom practices and how these practices contribute to the student's learning. The result has been decreased morale in the teaching profession with fewer new teachers entering the profession and a large number leaving the profession to seek careers in other fields (Baker, et al., 2010; Finnigan & Gross, 2007).

As the role of the teacher evolves, so too must the notion and perception of formal supports to engage teachers, especially novice teachers, in meaningful professional development that goes beyond just the development of new skills but also help these teachers rethink their practices on an intellectual, professional, social, and emotional level (Corcoran, 1995; Darling-Hammond & McLaughlin, 1996; 2011; Patton, Parker, & Tannehill, 2015). In the current high stakes policy environment, it stands to reason that

enhanced professional expectations should be met with effective and comprehensive professional development to enhance teacher development and improvement. This issue deserves attention as research on teacher preparation shows a strong connection between teacher professional development, specifically professional development through teacher mentor programs, and a decreased rate in teacher attrition (Andrews, Gilbert, & Martin, 2007; Evans-Andris, Kyle, & Carini, 2006; Latham, & Vogt, 2007; Wilkins & Clift, 2006). Additionally, the relationships established in mentoring programs can significantly influence the mentee's positive perception towards teaching (Zalaquett & Lopez, 2007).

Given that an individual typically relies on his or her co-workers to access information and resources (Siciliano, 2017), a feasible approach to supporting and retaining new teachers is to enhance the mentoring teachers receive in early career induction programs, which will prepare them to provide effective instruction. Morrison and Nolan (2009) stated that workplace support can be a positive experience when a person's identity is defined by his or her occupation, as is common in education, and when one can rely on workplace social support to accomplish and meet social needs. It stands to reason that collaborative mentoring relationships can provide the social support and invaluable lifeline to success for a beginning teacher. When teachers work in a collaborative environment where resources are available and shared, their self-efficacy and commitment to their students and to the school is enhanced (de Jong, Moolenar, Osagie, & Phielix, 2016).

Problem Statement

Mentorship is a form of personal or professional development relationship where the mentor, an experienced or more knowledgeable person, guides and helps the less

knowledgeable and experienced individual, the mentee (Callahan, 2016; Farren, 2006). One important purpose of mentoring is to provide support for the growth and retention of new teachers (Ingersoll, 2001). Mentoring has become a popular form of professional development (van Ginkel, Verloop, & Denessen, 2016), and the desire to promote mentoring as a primary source of professional development has led to increased collaboration between school districts and non-profit organizations. Teacher professional development research indicates that effective mentoring programs have been successful in smoothing the transition process, reducing teacher attrition, and maximizing satisfaction at work (Andrews & Quinn, 2005; Archer, 2003; Ronfeldt & McQueen, 2017; Stanulis & Floden, 2009).

While mentoring is important to the support and retention of new teachers, research on mentoring programs indicates that mentoring is successful in some cases (Lindgren, 2005; Malderez, Hobson, Tracey, & Kerr, 2007; Marable & Raimondi, 2007; Richter, Kunter, Lüdtke, Klusmann, Anders, & Baumert, 2013; Smith & Ingersoll, 2004) and not successful in other cases (Boyd, Lankford, Loeb, Rockoff, & Wyckoff, 2007; Ingersoll & Kralik, 2004; Jacobson, 2007; Sundli, 2007; Smith & McLay, 2007). Successful mentoring programs are defined as those where teachers felt they received the most professional and personal support from their mentors (Lindgren, 2005; Marable & Raimondi, 2007), resulting in a sense of commitment and belonging within the teaching community for both mentor and novice teacher (Bullough, 2005). On the other hand, an unsuccessful mentoring program is where the provision of mentoring and participation in professional development programs to and by novice teachers did not directly translate into improved instruction by the novice teachers or increased in student performance

(Glazerman et al, 2008). One possible reason why mentoring programs are successful in some cases and not in others may be a lack of social interaction to support and enhance resource exchange that leads to professional growth in mentoring relationships. Research supports this contention. For example, Jordan (2006) suggested that the quality and quantity of the interaction between mentor and mentee is a crucial determinant in the retention of new teachers.

However, a recent trend in mentorship programs is to pair teacher mentees with mentors that serve the district through a centralized mentorship program (Hanson & Moir, 2008). These mentors are removed from classroom teaching, and their primary responsibility is to serve as mentors to teachers across the district. This centralization removes the mentor from the mentee's school site and, rather than mentor/mentee relationships that originate as a result of daily workplace practices, the mentors work with several mentees throughout the district to promote teaching effectiveness. A better understanding of "the frequency and interaction patterns of communication and knowledge [that transfer between mentoring] groups" (Daly & Finnigan, 2010, p. 113) may provide an understanding of factors that influence the success of mentoring relationships in these centralized programs.

Purpose Statement

The purpose of this study was to examine the pattern of mentoring relationships embedded in a centralized mentoring program, the New Teacher Center (NTC), at two schools in a large, urban district in the Midwest. This study sought to explore patterns of relationship networks established in these NTC programs. Understandings sought included patterns of relationships between actors in the program, the directionality of relationships, and strength of relationships across the program at each school site.

Additionally, this study examined participants' perceptions about the resources embedded within the social networks in the program.

Research Questions

1. What is the underlying social network structure of support for new teachers at each respective school?
2. How is the New Teacher Center Induction Program represented in this structure?
3. What does the network structure suggest about the flow of communication and capacity for new teachers to develop professionally?
4. What are participants' perceptions of the resources embedded within the social network?
    a. How do new teachers perceive the mentorship they receive from the New Teacher Center Induction Program?
    b. What other resources do novice teachers perceive as important outside of the New Teacher Center?
5. How does social network theory explain these findings?

Theoretical Framework

Social network theory was the applied theoretical framework to study the interactions between mentors and mentees participating in the New Teacher Center's mentoring program. This "theory seeks to reveal and understand certain patterns in this social structure and searches for tangible mechanisms that are responsible for its social capital outcomes" (Burt, 2000 in Moolenaar, 2012, p. 10). Social network theory assists in our understanding of human interactions because it "posits that social structure, or the

web of relationships among individuals, offers opportunities and constraints for the exchange of resources" (Moolenaar, 2012, p. 11).

The theory provided a framework through which to understand networks in this teacher induction program whereby "individuals tap into the resources that are available in the social structure in which they are embedded and leverage these resources to achieve [their own] goals" (Moolenaar, 2012, p. 10). An individual's social network is defined by whom the person knows, whom the person talks to, and the strength and directions of these relationships (Moolenaar, 2012). In a school setting, a teacher's social network is defined by his or her relationships with other teachers, students, and with others in and outside the school district. These connections are fundamental to social network analysis because this research process focuses on the individual and the relationships that create opportunities and shapes outcomes for the individual (Carolan, 2014, p. 4).

Procedures

While qualitative research offers numerous techniques for generating data, a case study approach undertakes an in-depth examination of the issue at hand (Creswell, 2014; Patton, 2002; Yin, 1989). As explained by Merriam (1998), case studies provide a more focused approach to discovery through an "intensive, holistic description and analysis of a single instance, phenomenon, or social unit" (p. 27). Therefore, the research design selected for this study was a qualitative comparative case study with the incorporation of social network analysis to provide a deeper understanding and insight into the relationship patterns of the mentoring relationships at each school. This study examined the social networks of mentors and mentees in two schools within one large urban district

in the Midwest that utilizes a centralized approach to mentoring, the New Teacher Center, and seeks to capture participant perceptions about the resources embedded in relationship networks. These mentorship relationships are supported by New Teacher Center, at the district level, where mentors are assigned to multiple mentees within each building in the district. This study examined the relationship patterns, or social networks, between novice teachers and mentors at two schools located in that school district.

The New Teacher Center is an example of a mentoring program designed to enhance the success of beginning teachers. It is one example of many mentoring and new teacher induction programs that promote mentoring by working with school districts and policymakers across the country to provide the necessary resources and support to increase teacher effectiveness across all levels, especially for novice teachers. The New Teacher Center is founded on the principle that success is grounded in providing a support system to the new teacher, and mentoring relationships can provide the support that new teachers need to be successful (New Teacher Center, 2017a). However, this centralized approach is very different than traditional mentor/mentee relationships that are formed through associations in shared work spaces. Therefore, it stands to reason that understanding the relationships, or the structure of social networks, within this mentoring program may provide understandings to assist practitioners and policymakers as they seek to develop and promote more efficient and effective mentoring programs.

Specifically, the New Teacher Center program in an urban school district located in a Midwestern state provides an opportunity to gain a better understanding of "the frequency and interaction patterns of communication and knowledge [that transfer between mentoring] groups" (Daly & Finnigan, 2010, p. 113) in a centralized program.

Relationships, or social networks, formed in these programs may provide insight into factors that influence the success of mentoring relationships. This understanding is important because within the current environment of ongoing reform and restructuring, it is important that novice teachers develop and maintain strong relationships with individuals who will assist in their professional growth. This understanding is supported in research as Daly and Finnigan (2010) emphasized the importance of a pattern of relationships that shape a bounded network. Social Network theory helps to explain the resources that are embedded in these relationships.

Epistemology

Constructionism was the epistemological approach in this research. According to Crotty (1998) constructionism focuses on the "meaning-making activity of the individual's mind…points out the unique experience of each of us. It suggests that each one's way of making sense of the world is as valid and worthy of respect as any other" (p. 58). Creswell (2014) added that "individuals develop subjective meanings of their experiences…these meanings are varied and multiple, leading the researcher to look for the complexity of views…" (p. 8). In this research, reality is constructed by the lived experiences of mentors and mentees, how they interpret their experiences in the mentoring program, and how they make sense of it all (Crotty, 1998).

Setting and Participants

The first step to a case study is to define the case. The population in this comparative case study was one urban school district in a Midwestern state which utilizes the New Teacher Center to promote mentor/mentee relationships for professional growth. This district was selected because it includes a significant number of schools so as to increase the likelihood of novice teachers being hired and, therefore, increasing the

number of new teachers and mentors participating in the program. My research applies purposeful sampling to select two schools for comparison. I selected participants based on specific criteria as defined in Chapter III, and I chose participants to provide "information-rich cases" (Patton, 2002, p. 230).

Data Collection

I utilized multiple data sources, including a social network name generator survey, interviews, observations, and document analysis to provide a comprehensive understanding of mentoring networks in the New Teacher Center Mentoring program within the district. Data collection commenced with a social network analysis survey, and UCINET, a social network analysis software, was used as a tool to analyze the data. Interviews provided a deeper understanding of resources embedded in this particular bounded system. In addition, I observed meetings between the novice teacher and her mentor. Document reviews complemented these data sources. These sources expanded my understandings of results on the social network analysis survey and provided a deeper understanding on the responses from the survey.

Significance of the Study

This study provides important information about the social network structures of the mentoring relationships at these two schools and the resources embedded in these networks. Although qualitative findings are time and context bound and cannot be generalized, this information may be helpful for educational leaders who are planning future program supports for novice teachers. The results may also be of significance to practice, theory, and research.

Practice

This study highlighted crucial roles and supports, or potential supports, that are embedded in mentorship networks for novice teachers in the New Teacher Center Mentoring program. Understanding the structure of social networks within this mentoring program, because it is a centralized program, may assist practitioners and policymakers with understandings about the development of relationships within this program. Although not generalizable, these understandings may help to inform educational leaders about the importance of relationship networks and the resources embedded in networks when centralized programs are utilized. The findings are transferrable only to districts with similar demographic characteristics. However, understanding the perceptions of mentors and mentees about the resources embedded in these networks and the network structures that support those resources may be useful to inform administrators, educators, and other stakeholders concerning their own mentoring programs.

Theory

Daly and Moolenar (2012) explained that social network theory examines "the pattern of social relationships between individuals or units, organizations, and even systems" (p. 2). For this study, I used Lin's (2001, 2001a, 2005) work regarding developing a social network theory of social capital to examine the patterns of relationships embedded in schools applying the New Teacher Center program. The application of Lin's (2001a, 2005) work on social capital to mentor/mentee relationships may help to advance the development of this theory. The theoretical framework examined the social capital within teachers' relationship networks and assess the support

that were provided or absent to novice teachers and how these network connections influence the access and mobilization of social capital.

Research

As stated by Moolenar and Daly (2012), social network research has the potential to provide a better understanding of the role relationships play in learning, teaching, and educational change (p. 1). This study adds to the existing body of research in relation to the concepts of social networks in teacher mentoring programs. The study also bolsters existing research relating to new teacher mentoring and the enhancement of teacher retention through social supports.

Limitations of the Study

As a full-time student and not employed in the school district, I anticipated being labelled as the "outsider" which presents limitations to the study, especially since participants may be hesitant to share information in the surveys and interviews. This could limit the candidness of the participants' responses in interviews, particularly if their responses may be perceived as negative. Another challenge was that the participants may not fully appreciate the objective of my research which may limit the amount and type of information shared with me and the level of interaction I have with participants and during observations. In addition, this study was conducted in a large urban school district where many demands are placed on teachers' time. Their limited available time affected the response rate in the survey portion of the study and their availability for interviews and observations.

Because, in qualitative research, the researcher is the primary data collection instrument, I needed to guard against any bias and reflect on my position as the

researcher of this study. I have closely followed the programs and research conducted by the New Teacher Center, specifically its mentoring program; therefore, I needed to be careful to listen to the voices of participants as they construct their realities concerning the resources embedded in mentoring networks. Listening to the voices of participants helped to ensure that the findings reflect their perceptions rather than my preconceived understanding of this mentoring program.

Definitions of Terms

Actor. It is the entity within the network. The actor can be a collective, or corporate, or an individual, such as individuals in a group, or a department within a company, or nation-states (Wasserman & Faust, 2009, p. 17).

Centrality. Scott (2013) defines centrality as "the venue for all the various measures of closeness, betweenness, and other measures of centrality and prominence" (p. 6).

Density. This is defined by "the number of actual ties in a network divided by the number of potential ties" (Garland & Alestalo, 2014, p. 40).

Effective Teachers. For this present study, an effective teacher is an educator who receives the necessary tools and support through coaching or invaluable mentorship and a supportive community. In turn, students benefit from a powerful educator who engages in classroom tested and research-based practices leads to student success (New Teacher Center, 2017d).

Highly Qualified Teacher. The National Council for Accreditation of Teacher Education determines a highly qualified teacher by the teacher's level of preparedness.

For purposes of this research this is defined by "teacher knowledge of the subject to be taught, and knowledge and skill in how to teacher that subject" (NCATE, 2006, p. 4).

Node. Represents the actor, of the individual displayed in the sociogram (Carolan, 2014).

Peripheral. The location of an isolated actor who is "connected to the system by limited ties" with access to limited resources (Daly, 2015, p. 7).

Mentoring. This is the one-on-one interaction a novice teacher will receive with a veteran teacher as part of the former's professional development experience. The interaction can be formal or informal "relationships of trust and close affiliation" (Garland & Alestalo, 2014, p. 41).

Netdraw. This "network visualization software…[provides a diagram] of the collaboration network between [actors]" (Daly, 2015, p. 6).

Novice Teacher. For the purpose of this case study research, a novice teacher is a teacher who has fewer than three years of teaching experience.

Reciprocity. This defines "the degree to which actors…in a network select one another…and indicates the mutuality of the ties [between them]" (Carolan, 2014, p. 102).

Relation. This is the different types of flow of information and resources between members of the group. In the case of this study, it involves "individuals who can serve as navigators, coaches, sponsors, and/or confidants" (Garland & Alestalo, 2014, p. 41).

Social Capital. This is the series of networks of relationships developed by individuals who work and live together within a particular setting or community. For purposes of this research, social capital is defined "as resources embedded in one's social

networks, resources that be accessed or mobilized through ties in the networks" (Lin, 2005, p. 4).

Social Network. This is the type of relationship that connects the individual to other individuals within the same network. Carolan (2014) defines this as "a group of individuals and the relation or relations defined on them" (p. 4).

Social Network Analysis. This is the process by which relationships in these networks are visualized "based on an assumption of the importance of relationships among interacting units" (Wasserman & Faust, 2009, p. 4) and the "observed attributes of social actors… in terms of patterns or structures of ties among the units" (Wasserman & Faust, 2009, p. 4).

Social Network Theory. For purposes of this research, I will use Lin's (2001a, 2005) conceptual approach of a network theory of social capital. This conceptual approach clarifies the linkages between the three main sources of social capital, (1) the variations of the actor's position (structural position), (2) the network locations relating to the actor's location and features of the network (positional variations), and (3) the purposive actions of the actor for a specific outcome (be it instrumental or expressive outcomes). Social network theory and network theory of social capital are used interchangeably.

Sociograms. These are visualizations of relationships derived from social network analysis software. "these are maps of social networks…and are useful tools to identify certain network properties" (Carolan, 2014, p. 8).

Subgroup. These are groups within a larger social network and "can lend support or inhibit overall strategies [of an organization by working]...in similar areas and have more densely connected relations" (Daly, 2015, p. 8).

Teacher Professional Development. This comprises of enhancing levels of knowledge to enhance current practices and sustain new practices whereby it becomes an integral part of daily practice (Joyce, Showers, & Bennett, 1987).

Teacher Perception and Satisfaction. This refers to the overall teacher perception and satisfaction of professional development in general; but also in terms of interest in topic, content, and applicability.

Teacher Retention. This is defined as the school's ability "to retain a sufficient number of teachers with the proper credentials" to overcome the teacher turnover crisis

Tie. This is represented by the line that connects actors, or nodes, in a sociogram. Ties can represent different elements of relationships, such as friendships, exchanges, communication patterns, or conflicts (Daly, 2015, p. 19).

UCINET software. A software used to analyze social networks and produce matrixes based on responses from survey questions (Borgatti, Everett, & Freeman, 2002).

Summary and Organization of the Study

The purpose of this study was to examine the patterns of support relationships for new teachers who engage in the New Teacher Center mentoring program. This study is organized in five chapters. Chapter I introduces the issues that affect the success and failure of a mentoring program, the need for the study, the research questions, the theoretical framework, and methodology, and data analysis applied in this study. Case study methodology was used to allow for an in-depth study of the role of social networks

in the mentoring of novice teachers. Social network theory is the theoretical framework informing this study. This theory assists in our understanding of human interactions because it "posits that social structure, or the web of relationships among individuals, offers opportunities and constraints for the exchange of resources" (Moolenaar, 2012, p. 11).

Chapter II presents pertinent literature relating to mentoring in general, the history of mentoring, and its relevance to education and novice teachers in particular. This is followed by a review of social network analysis, social network theory, and the relationship between social network and mentoring relationships.

Chapter III introduces the methodology and the procedures implemented in this study, which included selection of the site and participants, data collection, and data analysis techniques. The chapter also addresses ethical considerations regarding bias and research background, and concludes with discussion on the trustworthiness of findings and limitations of the study.

Chapter IV provides a full description of the research sites and participants, the data collected and the findings of the social networks of novice teachers participating in the NTC program. Data was collected through a social network analysis survey, interviews, observations, field notes, and artifacts and presented in detail.

Chapter V includes a discussion of the findings through the research questions and through the lens of social network theory. Conclusions are drawn from these findings and implications to practice, research, and theory. The chapter ends with recommendations for future research.

CHAPTER II

LITERATURE REVIEW

The literature review includes key topics relevant to the purpose of this study. The literature review begins with a discussion of the needs and challenges novice teachers face and the relationships that these challenges have with high teacher attrition. Part II addresses the importance of social network analysis as an emerging popular form of methodology and the role it plays in educational research. The literature places particular focus on the role of social networks in enhancing mentoring relationships thereby benefiting novice teachers. The review ends with a discussion on the theoretical framework, Lin's (2001) network theory of social capital.

Part I: Needs and Challenges of Novice Teachers

Teacher Development and Effectiveness

Teachers are key elements in educational improvement for enhanced student outcomes (Hanushek, 2011; Lom & Sullenger, 2010). A prepared teacher is an effective teacher; however, support for new teachers is central to teachers becoming key assets to their schools. A teacher's effectiveness is greatly enhanced as he/she becomes more experienced in the early stages of a career (Harris & Sass, 2011).

As teachers progress through their career, they gain valuable knowledge about classroom management, become more familiar with academic standards, and improve their teaching skills (Clotfelter, Ladd, & Vigdor, 2007; Fox, Wilson, & Deaney, 2011). Ongoing teacher support, particularly for novice teachers, has multiple benefits, including improved teacher effectiveness, increase in job satisfaction, and teacher retention, with the latter being of fiscal benefit to the school district (Moir, 2009; Wiebke & Bardin, 2009). Additionally, networks teachers develop through formal and informal relationships have the potential to impact instructional practices and, subsequently, enhance student academic performance (Moolenaar, Sleegers, Karsten, & Daly, 2012). Therefore, teacher social networks are a critical component in understanding the professional development of teachers.

Needs of Novice Teachers

The need for ongoing teacher support has never been greater, especially as the profession has evolved over the last several decades. Twenty-first century teachers have to adapt to the growth of new applications and technology, and they must learn to work within an increasingly globalized and internationalized education landscape (Tynjala, 2008). This change has necessitated the need for continued teacher growth and development. Educational leaders must provide professional support to ensure that teachers remain competent professionals in their workplace through effective strategies that focus on effective classroom instruction and continual growth in teaching capacity (Tynjala, 2008). Because roles have changed and expectations have increased, new challenges and realities have resulted in a paradigm shift in public education. For example, the integration of technology in classrooms through one-on-one initiatives have

transformed the teaching and learning environment (Weston, & Bain, 2010). Additionally, some structural reforms, resulting from high stakes accountability reform movement, have been important attempts to advance equity and transparency. These reforms include new forms of assessment, new accountability standards, increased interest in school choice, and decentralization (Newman & Wehlage, 1995). These changes necessitate the need for qualified and effective teachers in every classroom to meet these new developments and expectations.

Mixed Results in Defining Teacher Effectiveness

The National Council for Accreditation for Teacher Education (NCATE) conceptualized country-wide standards for higher education teacher preparation programs to promote and ensure teachers receive quality preparation in their development as professionals. However, these standards have been criticized for placing more emphasis on the desire for student achievement rather than promoting learner-centered teaching (Stone, 1999), effective pedagogy, teacher effectiveness, and job satisfaction (Wiebke & Bardin, 2009).

The No Child Left Behind Act (NCLB) (2002), attempted to ensure that students were taught by only the most highly skilled teachers by establishing minimum qualification standards. NCLB defined a highly-qualified teacher as one who has obtained a bachelor's degree, obtained certification, and proved their competency in the core subject area they teach (Darling-Hammond & Berry, 2006, p. 1). However, states implemented their own definition of a highly qualified teacher. For example, teachers in Texas and Georgia were qualified teachers once they earned a college degree and passed a test, but were not required to be evaluated on their performance and teaching skills

(Darling-Hammond & Berry, 2006). The Race to the Top Act (RTTT) of 2013 was another missed opportunity to pursue an effective agenda on teacher qualification. Instead of confronting on the root causes of a widening achievement gap, the legislation focused on the symptoms. For example, one of the legislation's policies saw states vying for federal funding in return for data that unfairly held teachers solely accountable for student performance ignoring external factors affecting the student's performance such as race and socio-economic standing (Levine & Levine, 2012). States implemented teacher evaluation systems focused solely on student outcomes rather than systems that could identify potential avenues for improving teacher quality and effectiveness (Levine & Levine, 2012).

These mandates reveal how increased accountability and high-stakes testing have undermined teacher practices by encouraging nefarious practices (teaching to the test) and undermined educator morale and productivity (Nichols & Berliner, 2008). For example, teachers practiced clone teaching where students were encouraged to learn only what was necessary to pass the test. The influence of the high stakes accountability movement has undermined teachers' motivation to reach learners on measures beyond basic skills. This has this led to challenges in teacher support programs and research indicates that teachers are more likely to leave the profession because they are not fully prepared for the demands of the job (Boe, Cook, & Sunderland, 2008; Flynt & Morton, 2009).

Rather than treating teachers as production-line robots, reforms and policies should encourage more respect for the teaching profession (Levine & Levine, 2012). The Every Student Succeeds Act (ESSA) of 2015 attempts to move away from a culture of

fear and increased accountability by focusing more on teacher quality and improving teacher education (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2006; Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005). This approach applies value-added information to develop and provide more support for teachers by focusing more on their continuous improvement, their self-reflection, and their professional development (Sawchuk, 2016).

Challenges for Beginning Teacher Effectiveness

A well-prepared teacher has visions of what his/her effective teaching practices will look like from an assessment, curriculum, and pedagogic perspective (Confait, 2015; Hammerness, Darling-Hammond, & Bransford, 2005), and most teachers strive to work in a school environment where those visions become a reality. However, the quest to become a professional in the field and embrace new teaching practices can be a complex experience. Novice teachers often face a lack of support and opportunities for professional development provided for them. This lack of support leads to frustration which can be compounded by their inexperience and feeling of isolation which only spurs their decision to leave the profession (Confait, 2015). Yet, the only way they can overcome these challenges, gain much-needed experience, and become more effective is to remain in the profession (Ingersoll & Merrill, 2014). However, their longevity in the classroom is continuously being challenged by incompatible teaching assignments, stress, and high expectations on the job without adequate support.

Teaching assignment. Novice teachers are often placed in some of the most difficult teaching assignments, and they often have to deal with unruly students and unfamiliar curriculum (Headden, 2014). Being assigned a grade level or subject in which they have not been properly licensed or trained can negatively impact their teaching

ability (Johnson, Berg, & Donaldson, 2005). Case studies conducted in Massachusetts revealed that novice teachers "[struggled] to keep one day ahead of their students, [scrambled] to prepare lessons, and [dreaded] the prospect of being put on the spot during class" (Johnson, Berg, & Donaldson, 2005, p. 57). While such experiences did not directly result in turnover, they did cause dissatisfaction and stress among new teachers which can precipitate the teacher's decision to transfer or resign (Johnson & Birkeland, 2003). Also, teaching in low performing schools, teacher attrition is higher making it more challenging to attract and train effective teachers (Simon & Johnson, 2015). Public schools serving low-income communities face instability resulting from constant teacher turnover. The inconsistent staffing means students are taught by teachers who are inexperienced and less effective in their teaching (Simon & Johnson, 2015). The chronic turnover undermines any opportunity for stability and trustful relationship between teacher and students, especially for low performing and financially impoverished students (Ronfeldt, Loeb, & Wyckoff, 2013).

High stress on the job. The K-12 teaching profession is characterized by emotional exhaustion, burnout, and stress (Hakanen, Bakker, & Schaufeli, 2006). A teacher's typical day is marked by moments of isolation with minimal time for reflection (Fullan, 2001) and the never-ending feeling of being emotionally and intellectually drained (Chang & Davis, 2009). Even though extensive studies have been conducted to understand teacher burnout (Chang, 2009), these symptoms continue to permeate the teaching profession. One reason that teachers may feel discouraged is that teachers continue to experience increased scrutiny and blame-shifting (Hanushek & Rivkin, 2010; Prilleltensky, Neff & Bessell, 2016). As a result, the complexity of their profession

coupled with the social demands of interacting with their students often draw upon the teacher's emotional and intellectual resources (Hakanen, Bakker, & Schaufeli, 2006; Helms-Lorenz, van de Grift, & Maulana, 2016; Sutton, 2007). Not only is teacher commitment being undermined, but the teacher's health and well-being may also be neglected (Hakanen, Bakker, & Schaufeli, 2006, p. 509) as teachers disregard their own needs in order to find ways to adjust to the demands and pressures of the job. While these results are not, and should not be, surprising, they do raise serious implications for teacher retention in the long-term.

Each teacher's experience is different, making it even more challenging to identify a single or the multitude causes of teacher attrition. While teacher burnout and attrition are not uncommon (Gavish & Friedman, 2010), what is concerning is the unprecedented number of teachers leaving the profession. Ingersoll and Strong (2011) estimated that about half of novice teachers leave the profession within the first five years, which is higher than other comparable professions (Kearney, 2014). The number of teachers leaving the profession continues to increase. This number is estimated at 297,000 teachers since 2008 (Leachman, Albares, Masterson, & Wallace, 2016). This high attrition rate leaves schools struggling to fill vacancies as the population of k-12 students continues to increase. Research indicates that approximately 804,000 more students have entered public education since 2008 (Leachman, Albares, Masterson, & Wallace, 2016). Further, these trends have impeded districts' and schools' ability to implement sustainable reforms and have diminished the country's prospect of producing students able to compete globally. These factors, coupled with high teacher turnover,

bring uncertainty to the school environment, and they negatively impact student academic performance (Ingersoll & Smith, 2004).

Financial Impact of Teacher Attrition

It is estimated that public schools will need to hire an additional 2.2 million teachers over the next decade (Watlington, Shockley, Guglielmino, & Felsher, 2010). The cost of replacing missing teachers is estimated at over $2 billion to $7 billion (DeAngelis & Presley, 2007; Pogodzinski, 2012; Weibke & Bardin, 2009) with the cost of re-hiring estimated at $12,000 per teacher (Alliance for Excellent Education, 2004). A Chicago study estimated the financial impact of teacher turnover at $86 million a year and an average of $15,325 for every teacher leaving (Barnes, Crowe, & Shaefer, 2007). At a time when the education sector is facing aggressive budget cuts, these figures are very hard to digest. These figures are undeniably a cause for concern especially when the cost of comprehensive teacher induction programs per teacher is estimated at half of the hiring expenses (Moir, 2003; New Teacher Center, 2007). Such high turnover costs effectively undermine efforts by school districts to provide effective and quality teaching under an already constrained budget (Waterman & He, 2011).

How Attrition Impacts Effectiveness in Workplace and Student Success

School administrators and policy makers face the insurmountable challenges of stymieing excessive teacher attrition rates and resulting unintended outcomes (Barrera, Braley, & Slate, 2010). As such, low-income schools experiencing higher turn-over rates find it more challenging to fill these vacancies (Boyd, Lankford, Loeb, Ronfeldt, & Wyckoff, 2010; Ronfeldt, Loeb, & Wyckoff, 2013). The situation is especially critical in specific subject areas, such as special education, math, and science (Barrera, Braley, &

Slate, 2010), forcing school districts and states to resort to short-term solutions including hiring substitute teachers or teachers with temporary or emergency certifications.

The high teacher attrition rate and unstable education reforms have long-term effects on public education (Barrera, Braley, & Slate, 2010; Terry & Kritsonis, 2008). Ronfeldt, Loeb, and Wyckoff (2013) explained that, when teachers leave, established collaborations and relationships are lost, forcing students to start from the beginning with new teachers. The constant disruptions undermine the level of trust between students and teachers which can harm student performance (Ingersoll & Smith, 2004; Ronfeldt, Loeb, & Wyckoff, 2013). The negative impacts also extend beyond the classroom, as the country's economic growth is diminished when the ability to produce an educated workforce is weakened (Ronfeldt, Loeb, & Wyckoff, 2013).

Retaining Effective Teachers

Providing support to new teachers through comprehensive induction programs targets the dual goals of retaining these teachers and enhancing their teaching skills (Wechsler, Caspary, Humphrey, & Matsko, 2012). This support may include mentoring programs to help novice teachers navigate their new work environment (Kang & Berliner, 2012; Waterman & He, 2011). Effective induction programs result in teacher retention (Darling-Hammond, 2003) by as much as 50% in some cases (Kearney, 2014, p. 11) and also lead to improved student success (Kang & Berliner, 2012; Villar & Strong, 2007). The concept behind mentoring programs is to allow and encourage novice teachers to leverage resources available within their social structure towards achieving their own professional goals (Moolenaar, 2012, p. 10). For example, the tools and opportunities to collaborate in mentoring relationships enable novice teachers to become active and successful in their profession (Barrera, Braley, & Slate, 2010).

Mentoring

A novice in any profession typically needs extensive time to become an expert in his/her field. For novice teachers, it typically takes three to seven years to achieve proficiency level (Barrera, Braley, & Slate, 2010). The first few years of teaching are especially important as novice teachers make crucial gains in the first few years of their profession (Barrera, Braley, & Slate, 2010; Rivkin, Hanushek, & Kain, 2005). The first year is always the most crucial for a novice teacher, and the support and training extended effectively determines the teacher's professional trajectory. A study by Gallant and Riley (2014) indicated that beginning teachers had a more positive experience when they received support and worked within a positive work environment.

Wynn, Carboni, and Patall (2007) emphasized the value of mentoring programs and psychological support (p. 213) they provided to novice teachers. Specifically, instructional support covering the fundamentals of school rules, classroom management, lesson planning, whereas psychological support addresses the emotional and personal needs of the teacher (Stansbury & Zimmerman, 2000). However, current financial challenges have forced districts to seek alternative avenues for teacher professional development. For example, mentoring is a cost-effective way of providing such professional development (Hudson, 2013), and school-based mentoring continues to play a prominent role in providing the induction and initial professional development that novice teachers need (Hobson, Ashby, Malderez, & Tomlinson, 2009).

Mentoring Defined

The traditional definition of mentoring is "a process whereby experienced and mature person provides information, advice, and emotional support to novices over a period of time" (Aderibigbe, Colucci-Gray, & Gray, 2016, p. 10). Mentoring has been

likened to an apprenticeship relationship where the mentor's experience is a crucial element in supporting the student-teacher who, in turn, expands his or her skills and professional knowledge (Bradbury, 2010; Krull, 2005). In education, mentorship provides teachers with relevant support and foundational training to enhance their knowledge and teaching skills. In turn, teachers interact confidently with students, thereby enhancing student success. A comprehensive mentoring program begins with identifying the needs of the novice teacher to provide quality assistance to meet those needs (Barrera, Braley, & Slate, 2010). Mentoring is a valuable tool for underfunded districts because of the embeddedness of mentorships and the low cost of implementation (Hudson, 2013).

Concepts of a Mentoring Program

The concept of mentoring can take on a variety of forms in a variety of contexts. However, commonalities remain true throughout. These commonalities include a professional collaboration or relationship, a mentor who is willing to share from his/her experiences and knowledge, and a mentee who is learning (Ambrosetti, Knight, & Dekkers, 2014). Mentoring relationships facilitate the successful and positive teaching experience for both mentor and mentee (Barrera, Braley, & Slate, 2010; Hudson, 2013). A successful pairing is influenced by compatibility in personal and professional attributes. The mentor is encouraged to espouse interpersonal skills, supportiveness and willingness to listen (Kajs, 2002). Hudson (2016) added that a mentor must recognize the mentee's limitations and be willing to provide encouragement and praise where needed. Similarly, a mentee has to be open to constructive criticism and feedback, be open to

relationship building, display commitment to his/her career, and accept responsibility for ongoing professional development (Hudson, 2016).

Benefits of Mentoring

The explosion of research on teacher mentoring has not only improved our understanding of mentoring programs but it has detailed the benefits of this process for beginning teachers, mentors, and education systems and schools (Beutel & Spooner-Lane, 2009; Hobson, Ashby, Malderez, & Tomlinson, 2009; Tang & Choi, 2009; Rippon & Martin, 2006; Zachary, 2009). The goal of mentoring is to encourage personal satisfaction as the mentee experiences professional growth and increased productivity in the workplace (Kajs, 2002). Research indicates that mentoring has, on the whole, delivered on those expectations wielding positive experiences for both mentor and mentee (Allen, Cobb, & Danger, 2003; Hudson, 2013; Lopez-Real & Kwan, 2005).

Mentoring has become one of the most effective forms of induction for beginning teachers, in which participants engage in problem-solving activities and self-reflection (Bullough, Young, Hall, Draper, & Smith, 2008; Kardos & Moore Johnson, 2007; Peters & Pearce, 2012). The collaborative environment has been found to increase novice teachers' self-confidence and self-esteem (Le Cornu, 2013). The socialization process that mentees experience provides added comfort and allays many concerns attached to new jobs. As a result, the novice teachers are able to successfully navigate and adapt to the expectations, standards, and norms of the respective school (Alhija & Fresko, 2010; Bullough & Draper, 2004).

Other noted benefits of mentoring include job satisfaction and enhanced morale (Bollough, 2005; Hobson, Ashby, Malderez, & Tomlinson, 2009; Marable & Raimondi,

2007; Lindgren, 2005). Though effective guidance and support, novice teachers are able to hone their classroom and behavior management skills while effectively balancing their work balance and time management (Moor et al., 2005). In order to counterbalance the reality shock when starting a new job, mentoring offers novice teachers knowledge (Gujarati, 2012; Hobson, Ashby, Malderez, & Tomlinson, 2009; Kang & Berliner, 2012); and supports their transition from student teachers to teachers of students (Andrews & Quinn, 2005; Barrera, Braley, & Slate, 2010; Stanulis & Floden, 2009). Such support has positively influenced teacher retention (Bollough, 2012; Croasmun, Hampton, & Hermann, 2000; Johnson, Berg, & Donaldson, 2005; Smith & Ingersoll, 2004). As a result, the continued presence of the teacher in a classroom also ensures structure and continuity of the students' learning (Fletcher & Strong, 2009; Ingersoll & Strong, 2011; Rockoff, 2008) thereby promoting organizational goals of enhanced student success.

Not only do mentees benefit from mentoring relationships, mentors also reported a positive experience particularly when seeing "their mentees succeed and progress" (Hobson, Ashby, Malderez, & Tomlinson, 2009, p. 210); while expanding their knowledge base and improving their teaching styles and communication skills (Lopez-Real & Kwan, 2005). Mentors also reported a positive experience from "opportunities to talk to others about teaching and learning…gaining new ideas and new perspectives" (Hobson, Ashby, Malderez, & Tomlinson, 2009, p. 209).

Challenges to Successful Mentoring Programs

Despite these documented benefits, mentoring programs continue to experience financial and administrative challenges, including inadequate funding and administration and teacher turnover.

Inadequate funding. Systemic underfunding is a constant factor that contributes to mentoring programs failing (Fantilli & McDougall, 2009; Feiman-Nemser, 2001; Totterdell, Bubb, & Heilbronn, 2002). Well-funded programs yield quality support through carefully selected and well-prepared mentors (Darling-Hammond, 2003). Darling-Hammond, Wei, and Andree (2010) advocated that if the United States is to emulate the successful education systems of other developed countries, extensive reconfiguration of current practices is required. Part of this review is perceiving and treating teachers as professionals, prioritizing teacher professional development through increased funding, increased and establishing strong and effective support structures for teachers (Darling-Hammond, Wei, & Andree, 2010, p. 8).

Time constraints. Sufficient time should be allocated for observations and feedback on novice teacher's instruction by the mentor (Barrera, Braley, & Slate, 2010). However, teachers are often unable to fully engage in this process because their time is consumed by grading, lesson planning, and other professional commitments (Darling-Hammond, Wei, & Andree, 2010). A 2007 report by the Organization for Economic Co-operation and Development (OECD) indicated that United States teachers, on average, spend far more hours teaching (1080 hours per year) than other teachers in OECD nations (803 hours in primary schools and 664 in secondary schools) (Darling-Hammond, Wei, & Andree, 2010). The report concluded teachers in America have less time "to plan and learn together, [and develop] high-quality curriculum and instruction" (Darling-Hammond, Wei, & Andree, 2010, p. 3). Darling-Hammond, Wei, and Andree (2010) recommend providing a minimum of 10 hours a week where "teachers can engage in

collective curriculum planning, analysis of student work, and sustained job-embedded professional development" (p. 8).

Lack of trained mentors and quality of support providers. The direction and outcome of a mentoring relationship can also be skewed by the mentor's preparedness and level of involvement (Hudson, 2016). Sometimes there can be a clash of personalities when the mentor oversteps his or her role. In other instances, there may be a power struggle with the mentee resistant to constructive feedback and advice extended by the mentor (Hudson, 2016). In such instances, a poorly prepared or trained mentor can be more harmful to the mentoring process (Tomlinson, Hobson, & Malderez, 2010). Sundli (2007) further added that in other cases mentors can have a limited concept of what mentoring entails and ultimately miss the mark on encouraging novice teachers to remain in their job.

Administration and educator turn-over. Even with comprehensive induction support and improved matching between teachers and schools, teacher mentoring also requires the support of administrators and educators (Boyd, et al., 2011; Headden, 2014; Ingersoll & Strong, 2011). As such, Kardos and Moore Johnson (2007) suggest that school leaders can be the primary facilitator of an environment that promotes interaction and professionalism between mentor and mentee and between colleagues. Research indicates that school climate and principal leadership are significant factors influencing novice teachers' decision to remain at the respective school (Ladd, 2009; Wynn, Carboni, & Patall, 2007). Brown and Wynn (2009) viewed school leaders who achieved teacher retention as "successful entrepreneurs" who believed in the equal application of "strong instructional, operational, and strategic leadership" (p. 43). Strong leaders encourage

teacher retention, teacher input, and collaboration (Darling-Hammond, 2003; Brown & Wynn, 2009).

However, Headden (2014) indicated that absence of administrative support can lead to teacher attrition. Similar sentiments were noted in 2012 study of New York City teachers where the majority indicated that if given the choice, they would rather choose a work environment with dedicated administrator support over an environment where teacher pay was significantly higher (Headden, 2014, p. 8). Kardos and Moore Johnson (2007) stated that more is needed beyond merely implementing induction programs. In order to create "a culture of professional support and commitment" (p. 2101), teacher induction was specifically introduced in the United States during the 1950's and 1960's to enhance the professional standards of educators (Kearney, 2014) and to meet the increasing demand for more teachers (Hobson, Ashby, Malderez, & Tomlinson, 2009). Teacher induction is defined as a series of "collective programs involving orientation, support, and guidance for beginning teachers" (Kearney, 2014, p. 5). Part of these induction programs also featured a mentoring component, and since then, school-based mentoring has become a prominent component of new teacher induction (Hobson, Ashby, Malderez, & Tomlinson, 2009).

The most common mentoring model is the traditional model. Jones and Brown (2011) described this model as a hierarchical or formal relationship where an experienced teacher shares information, knowledge, or support to the protégé. The mentor, typically appointed by the building administrator, has a profound understanding of the school's context, culture, and unique features. It is common for these mentors to be teaching a similar subject or grade as their mentee, providing a powerful context for examining

student data and collaborative lesson planning. In addition, the veteran teacher has a current understanding of the new teacher's teaching curricula and of the students' learning needs.

Strong (2005) argued that while the buddy system may offer a more casual interaction, challenges were noted in the traditional program. These challenges included limited release time and lack of compensation to reflect the additional responsibility taken on by the mentor (Kyriacou & O'Connor, 2003; Lee & Feng, 2007). Mentoring is a highly complex and labor-intensive experience as mentors are expected to provide pedagogical and emotional support, and provide formal evaluation while tending to their own teaching schedules and other professional obligations (Bullough, 2012; Iancu-Haddad, & Oplatka, 2009). Mentors are thinly stretched as they struggle with their mentoring duties and unmanageable workload (Bullough, 2012). These limitations have led to this model being criticized for failing to effectively meet the needs of mentees (Aderigbe, Colluci-Gray, & Gray, 2016).

Over time, the traditional model has been transformed from a hierarchical relationship to an interdependent one. The Reciprocal Model emphasizes more mutual respect, more inclusion of stakeholders, more collaboration, and equal opportunities for all stakeholders (Jones & Brown, 2011, p. 406). No doubt this model is more popular among novice teachers, and it responds to an equitable mentoring relationship where both mentor and mentee have equal say "about timeframes, directions of the dyad and topics discussed…" (Jones & Brown, 2011, p. 406). Offshoots of the Reciprocal Model have emerged in mentoring literature. For example, peer mentoring encourages the mentee to engage "multiple mentors and take responsibility for their own learning" (Jones &

Brown, 2011, p. 410). Another offshoot is the reverse mentoring model (Harvey, McIntyre, Thompson Heames, & Moeller, 2009). This model, typical in the business sector, flips the traditional mentoring model around whereby "the young and technologically adept [serve as mentors to] older, more senior colleagues" (Jones & Brown, 2011, p. 410).

Mixed Results in Mentoring Programs

Research has shown that sometimes support to novice teachers, including mentoring, has been successful (Glazerman, et al., 2010). However, these support programs have sometimes been unsuccessful (Long et al., 2012, Glazerman, et al., 2008; Antoniou & Kyriakides, 2013). Mentoring programs can fail when there is a discrepancy between policy objective and how the program is rolled out in schools (Fresko & Alhija, 2009; Tomlinson, Hobson, & Malderez, 2010) These limitations have led to some researchers questioning the link between mentoring and teacher retention (Glazerman et al., 2010; Wechsler, Caspary, Humphrey & Matsko, 2012).

Findings from a 2010 study revealed that additional induction support did not automatically translate into enhanced classroom practices in the teacher's first year nor did it impact student achievement (Glazerman, et al., 2010). The quantitative data indicated that comprehensive induction programs failed to make teachers "feel more satisfied with or more prepared to do their jobs" (Glazerman et al., 2010, p. 99). On the other hand, teachers receiving the intervention "were significantly more likely than control teachers to report satisfaction with [professional development opportunities]" (Glazermna et al., 2010, p. 100). This research indicates that teacher support was effective as long as quality of service provided and sufficient time available for teacher

participation were also present. Similar results were noted with teachers feeling better prepared. The only notable difference of significance is that "treatment teachers were less likely than control teachers to report being prepared to instruct" (Glazerman et al., 2010, p. 100). While these findings raise doubts about the effectiveness of mentoring programs; they also emphasize that change takes time and that school districts and policy makers have to emphasize the long-term positive impacts, including increased support to novice teachers (Glazerman et al., 2010; Waterman & He, 2011).

A New Mentoring Model

One particular concept that is gaining attention through observed successes is the use of full-time mentors who are based in teacher development offices at district level, instead of being building-based (Schmidt, Young, Cassidy, Wang, & Laguarda, 2017). Fletcher and Strong (2009) use the term full release mentors to describe accomplished veteran teachers who agree to become a mentor full-time with the expectation that they will return to their classroom (Hanson & Moir, 2008, p. 453). This revolutionary concept is in response to effectively solving the haphazardness that novice teachers experience in their mentoring relationships. In this model, information is intentionally shared through regular one-on-one interactions between the mentor and mentee (Martin, 2008). The relationship is deemed successful when the mentor is able to direct their mentee's focus on developing effective teaching practices which are critical elements at the start of a novice teacher's career (Martin, 2008, p. 43).

The concept of a non-traditional external mentor program has also been applied in higher education (Haines & Popovich, 2014). Mentors, who were faculty members from other pharmacy schools and colleges, would meet their mentees once a semester and

engage in virtual meetings. Haines and Popovich (2014) described this centralized model as a positive approach as external mentors are less predisposed to the institution's leadership, politics, or the environment. Another program with similar components was based in Australia were external mentors offered their support through an online mentoring to special education teachers. This innovative program allowed mentees to keep in touch with their mentees in weekly email (Dempsey & Christenson-Foggett, 2011). Novice teachers appreciated the support and responsiveness of the external support, particularly because their specialty meant working in isolation (Dempsey & Christenson-Foggett, 2011). This innovative mentoring approach can be valuable for teachers working in rural school districts with limited consultancy support (Dempsey & Christenson-Foggett, 2011).

The full-time release mentor concept also has its limitations. Kilburg's and Hancock's (2006) investigation explored the realities of mentoring programs where the mentor was a full-time teacher but was located in a different building. One of the recurring problems experienced by the participants was finding time to meet. Mentor and mentee teachers were overwhelmed with preparing for the start of the semester. The researchers discovered that distance, the teachers' daily duties, and the lack of time prevented made it impossible for mentees to connect with their mentors on regular basis for much-needed advice and information (Kilburg & Hancock, 2006). While having mentors based in the same building as their mentees offers quick access to meet and discuss, it also presents other implications. For example, the level of protection and confidentiality may be absent and the relationship can take on more of an evaluative tone rather than an informative and self-reflective approach. Mentees are reluctant to be open

with their mentors in fear of negative evaluations and affect their probationary period (Dempsey & Christenson-Foggett, 2011).

While it seems that distance was a negative indicator in Kilburg's and Hancock's (2006) research, could it have been a different experience had the mentee been a full-time mentor focusing solely on their mentoring duties? By not having the full-time demands of their classrooms and students, mentors are able to maneuver around their mentees' busy schedule and overcome scheduling conflicts (Strong, 2005). Fletcher and Strong (2009) also indicated that full-time release mentors had more time to study and advise their mentees on how to improve their teaching practices. Evaluation of this new mentoring model found that new teachers who were assigned full-time mentors were more likely to remain on the job (by as much as 70 percent) and their teaching practices increased student achievement (Schmidt, Young, Cassidy, Wang, & Laguarda, 2017). The researchers added that students gained up to five months of additional learning in math and reading. Key strategies attached to the program's success was smaller mentor caseloads and adopting a full-time release mentoring model.

It can be argued that full-time released mentors may lack credibility because they are away from the classroom and may not be up-to-date on the culture and practices of the school where their mentee works. Yet, the full-time mentor brings an outsider's perspective on matters of resources, personnel, and district information. Haines and Popovich (2014) believed this is as a positive aspect as external mentors are less predisposed to the institution's leadership, politics, or the environment. By not being connected to the school building, the mentor can provide a safe and comfortable environment for the novice teacher to be honest, at ease to share their concerns, and to

feel comfortable enough to discuss any challenging situations. Without the threat of retaliation, both mentor and mentee can freely provide feedback and constructive criticism to each other (Rush, Blair, Chapman, Codner, & Pearce, 2008).

Part II: Social Network Analysis

Social network analysis is popularly used for investigating "kinship patterns, community structure, [and] interlocking directorships" among individuals (Scott, 2004, p. 2). This methodological approach seeks to discover these different patterns in networks and then tries to ascertain or anticipate the conditions under which these patterns are established and their consequences (Freeman, 2004, p. 2). These networks, or relationships, have important consequences for actors, or participants in the network. For example, mentoring relationships in education can significantly influence a novice teacher's experience and career trajectory (Moolenaar, 2012). In education, social network analysis provides the opportunity to enhance professional development and organizational effectiveness (Daly, Liou, & Moolenaar, 2014) through increased support, collaboration, and advice on best practices (Spillane, Kim, & Frank, 2012). Freeman (2004) stated that social network focuses on "the social part of behavior…. the ways individuals interact and the influence they have on one another" (p. 1). The nature of these relationships varies by type. For example, relationships may be economic, political, or social in nature (Wasserman & Faust, 2009). Freeman (2004) stated that human beings have always implicitly "recognized the importance of ties that link social actors" (p. 10).

Wasserman and Faust (2009) stated that this methodology is a distinct research application because it "is based on an assumption of the importance of relationships among interacting units" (p. 4). The unit of analysis under investigation within a

particular network focuses on of individuals and the linkages (or connections) between them, rather than just the individual (Wasserman & Faust, 2009). Williams and Durrance (2008) added that social network analysis "comprises [of] both method and theory….[whereby]…the actors and nodes have been…defined as individuals, groups, companies, or even countries" (p. 1). Another aspect of social network is the study of resources embedded within social networks, present in a variety of forms, including "social support, emotional support, companionship, time, information, expertise, money, business transactions, shared activity, and so on" (Williams & Durrance, 2008, p. 1). Access to these resources is determined by the individual's position in the network (Williams & Durrance, 2008).

While social network analysis is rapidly becoming a popular form of examining social patterns and relationships; it also has its limitations. It has been criticized for being "a loosely organized configuration of presumptive claims about the nature of knowledge process" (Dunn, 1983, p. 453). This is further supported by Borgatti, Mehra, Brass, and Labianca (2009) who stated that a common criticism of this discipline and research of social networks is the absence of a theoretical understanding, which renders it merely a methodological or descriptive approach. These limitations are further compounded by the fact that outcomes of social network research have, in fact, challenged "assumptions or conclusions or knowledge [typically held by] scholars and practitioners" (Dunn, 1983, p. 460). For example, there was an established belief that closing the knowledge/communication gap between policymakers and scientists would positively increase "information-exchange potential" (Dunn, 1983, p. 460). On the other hand, proponents argue that having this gap is more beneficial where weak ties (or wider gaps)

encourage “the potential for information exchange [as determined by] differences…in attitudes, beliefs, values, and demographic characteristics (Dunn, 1983, p. 460).

The strength of weak ties concept, established by Granovetter (1983; 1973), lends to the notion that individuals with weak ties, within a particular network or between networks, may be best placed to develop local bridges in their network. Granovetter (1983) believed that an individual with weak ties will benefit from more information than an individual with few weak ties (p. 202). In other words, when an individual has access to individuals within other networks or when an individual does not know members of a particular network well, new ideas or information may be exchanged. This situation is different that communication with individuals who are well acquainted because stronger ties typically occur between individuals who think similarly or who have common experiences (Granovetter, 1983). These connections, weak ties, are vital to the individual’s integration in society.

Key Developments in Social Network Analysis

The study of network structure has been prevalent in behavioral sciences and social disciplines and pioneered by experts from anthropology, such as Mitchel Barnes, and in social psychology and sociology, including Moreno, Newcomb, and Cartwright (Wasserman & Faust, 2009, p. 10). Since then social network research has been applied in other fields including economics, psychology, political science, and anthropology (Borgatti, Mehra, Brass, & Labianca, 2009). The formal development of social network analysis consists of three main branches which are discussed in the next section. The first is sociometry and graph theory. The second branch emphasized the significance of interpersonal and informal relationships within social systems through “patterns of

interpersonal relations and the formation of cliques" (Scott, 2013, p. 11). The third branch investigated the structure of relations within communities and the development of total and partial networks (Scott, 2013).

The Hudson study and sociometry. Initial work by Jacob Moreno led to the development of sociometry. Moreno described Sociometry as "an experimental technique…which inquires into the evolution and organization of groups and the position of individuals within them" (Freeman, 2004, p. 37). In the Hudson study, Moreno studied "the epidemic of runaways at the Hudson School for Girls" where 14 girls had run away over a period of two weeks (Borgatti, Mehra, Brass, & Labianca, 2009, p. 892). Moreno "mapped the social network at Hudson using sociometry" which was a graphical representation of the individual's "subjective feeling towards one another" (Borgatti, Mehra, Brass, & Labianca, 2009, p. 892). Moreno argued that the links between the runaway girls created the channels through which ideas and social influence flowed between them. The Hudson study was significant as it resulted in the extensive development of the sociometric approach (Freeman, 2004, p. 35) that represented the network patterns of the girls who had run away (Borgatti, Mehra, Brass, & Labianca, 2009).

Freeman (2004) described Moreno's conceptualization of sociometry as "[inquired] into the evolution and organization of groups and the position of individuals within them" (p. 37). Moreno elaborated his findings and propelled investigations into social configurations which Scott (2013) defined as "the results of the concrete patterns of interpersonal choice, attraction, repulsion, friendship, and other relations in which people are involved" (Scott, 2013, p. 13). Moreno's research also led to the development

of sociograms to represent "the formal properties of social configuration" (Scott, 2013, p. 14). These social configurations are defined by individuals "by points and their social relationships to one another by lines" (Scott, 2013, p. 14). As Durland and Fredericks (2005) stated, sociograms provide a visual representation of the various aspects of a relationship or the different connections among individuals within a group.

Topology and set theory. Another notable development during this period was by the Research Center at the Massachusetts of Technology led by Kurt Lewin, focusing on group dynamics (Freeman, 2004; Scott, 2013; 2017). Lewin asserted that "a social group…exists in a…social space that comprises the group together with its surrounding environment…called the definition of the situation" (Scott, 2017, p. 15). Lewin suggested that the group's behavior "is…determined by…social forces in which the group is located" (Scott, 2017, p. 15). Lewin developed and applied topology and set theory techniques to measure the structural properties of the group's social space (Scott, 2013, 2017). In the topological approach, points, signifying individual persons, their actions, or their goals, are connected by paths, which "represent the interactional or causal sequences that connect them" (Scott, 2017, p. 16). This approach identified interdependence of respective groups and their actions as influenced by their environment (i.e. determined by the boundaries of the group's social field) (Scott, 2013).

The Harvard studies. Research by Brown-Radcliffe and Elton Mayo studied informal relations through the development of techniques that could uncover subgroup structures in social systems – termed blocks, or clusters, or cliques. Their discoveries led to the conclusion that large-scale systems, which contained relational data, could in fact contain cohesive subgroupings (Scott, 2017). Radcliffe-Brown's work featured heavily in

investigations by W. Lloyd Warner and Elton Mayo in two major projects at Harvard University, one of community life and the other on the factory life in the United States. The factory life investigation, known as the seminal Hawthorn study, is an investigation at the Hawthorne Factory of the Western Electric Company in Chicago. The findings suggested that worker productivity increased, irrespective of whether changes were made in the work environment or not, simply because the workers were motivated by their managers' interest in the workers' factory life (Scott, 2013). The study enhanced the development of a new form of network analysis: the egocentric network approach. The egocentric approach focuses on individuals and their relationships within groups, rather than on group behavior. The Hawthorne study was the first in social network analysis to develop sociograms that identified individuals using circles and relationships were represented by arrows (Scott, 2017). A typical egocentric structure involves "a person, or ego, surrounded by a network of contacts, typically within a broader market or organization" (Burt, Kilduff, & Tasselli, 2013, p. 528). Moreno described this structure the "social atom…[which is] the smallest unit of social structure in a community" (Burt, Kilduff, & Tasselli, 2013, pp. 528-529).

Subsequent studies, the Community Life study and the Yankee City study, by Warner also confirmed the presence of cliques or sub-groups. Cliques are "informal associations of people among whom there is a degree of group feeling and intimacy and in which certain group norms behavior have been established" (Scott, 2013, p. 23). Building on those previous studies, Homans developed the matrix form as a new way of presenting data (Scott, 2017). Homans also hypothesized that there was a direct

correlation between the increased frequency of interaction resulting from an increased likelihood of members in the group developing sentiments for each other (Scott, 2017).

Graph theory and matrix algebra. Lewin's research was further expanded by Cartwright and Harary (1956) through the development of graph theory. Graph theory is a "body of mathematical axioms and formulae that describe the properties of the patterns formed by the lines [of a graph]" (Scott, 2013, p. 17). The graph expanded on Moreno's sociogram to include the analysis of the interpersonal relationships between groups (Scott, 2017). In a graph, the points (representing an individual) are connected by lines which represent the relationship of one individual to another. Arrows indicated the direction of the relationship, and a plus or minus sign identified whether the relationship was a positive or negative one.

Structures of relations within communities: The Manchester study. During the 1950's to the 1970's, social network analysis experienced rapid growth, partly resulting from the expansion in communication technology and computing, the collection of more specific network data, and improved machines to analyze that data (Burt, Kilduff, & Tasselli, 2013). Harvard University sociologists and anthropologists, in the 1960's, expanded Radcliffe-Brown's idea on the importance of interpersonal relationships. The Harvard breakthrough resulted in two parallel mathematical innovations that revolutionized the analysis of networks. The first was the "development of algebraic models of groups using set theory to model kindship," and the second was the creation of "multi-dimensional scaling [which translated] relationships into social distances and…mapping them into a social space" (Scott, 2013, p. 35). These developments showcased the establishment of social network analysis as a significant

method of structural analysis that initially emerged "as relatively non-technical" by social anthropologists (Scott, 2013, p. 1). The study of relationships has since been applied in the economics, political science, engineering, computer science, physics, and neuroscience fields (Denny, 2014).

Other Key Elements of Social Network Analysis

According to Denny (2014), social network analysis is the study of "relationships between entities" (p. 1). Network analysis looks at the "communication flows and patterns [that] are between units and across hierarchical positions" (Lunenburg, 2011, p. 1) in a social system. The analysis process "focuses on the types of relations one has with others" and examines the impact these relations have on the attitudes and behaviors of the individual or the group (Carolan, 2014, p. 4). Therefore, the purpose of this section is to introduce key properties of social network analysis.

Informal networks and the strength of weak ties. Social networks can either be formal networks or informal networks (Lunenberg, 2011). The informal aspects of these networks are similar to the grapevine activity or "the informal communication [or interaction] network" in organizations (Crampton, Hodge, Mishra, 1998, p. 569). This is where the strength of weak ties concept emerged in relation to the advantages brought from bridges built across clusters (Granovetter, 1973). Crampton, Hodge, and Mishra (1998) identified conditions within a grapevine network. The first is the importance of the communication subject to the speaker and listener. The second is the ambiguousness of the situation associated with the communication. Lastly, informal networks tend to transmit information at a faster speed than formal networks (p. 570). The benefits of these informal networks were highlighted in seminal studies by Granovetter (1973; 1974)

revealing how resourceful weak ties could be, especially in specific activities, such as job-seeking (Williams & Durrance, 2008).

Granovetter's experiments led to the development of the strength of weak ties theory (SWT) based on the following premises. The first is that individuals "tend to have stronger ties with people who are similar to themselves" (Borgatti & Halgin, 2011, p. 1170). The second principle of SWT proposes that weak ties are the most likely source of information as bridges of communication of new ideas are more likely to be present. Therefore, it stands to reason that individuals with more weak ties (more social capital) are more successful to hear about pertinent information, such as job openings (Borgatti & Halgin, 2011). These connections, or ties, are dictated by the social status of the individual within that particular network (Burt, Kilduff, & Tasselli, 2013). Lin (1999b) described social attainment "as a process by which individuals mobilize…and invest resources for returns in socioeconomic standings" (p. 467). The individual can access these social resources through the person's ties, either direct or indirect (Lin, 1999b). In return, these resources can exert significant influences on the individual's attained status.

Methods and Measurements

Network sampling. The population and actors need to be specifically identified in order to determine the source of network data. However, because of the requirement for boundary specification, Wasserman and Faust (2009) cautioned that sample selection could sometimes be challenging. This difficulty can be caused by several factors: the population could be too large, the constant movement of actors in and out of that population, or the difficulty in defining a section of that population or determining whether a certain actor belongs in that particular population set (Wasserman & Faust,

2009). There are two approaches in network sampling. The first, the realist approach, focuses on the boundaries and membership to the population as determined by the actor (Lauman, Marsden, & Prensky, 1989). The second approach, the nominalist, is defined by the researcher's theoretical interests/concerns as determined by the researcher's own analytic agenda (Lauman, Marsden, & Prensky, 1989). Lately, network studies have expanded to large collectivities with less-defined boundaries, such as "interorganizational networks in a community…[or]…across an entire nation" (Wasserman & Faust, 2009, p. 33). However, this approach requires extensive resources and complicates data analysis process. This is where sampling techniques are used, such as snowball sampling, by focusing on the connections of the particular individual at the starting point of the sampling (Scott, 2017).

Collecting network data. Questionnaires or surveys are the most common form of data collection and "contain questions about the respondent's ties to the other actors" (Wasserman & Faust, 2009, p. 45). Surveys are commonly applied in ego-centered networks. Social network surveys typically come in three forms: free call vs. roster, fixed choice vs. free format, or complete rankings vs. ratings format. In the first format, the actor is provided with a list, or roster, listing names of other actors and is asked to rate his or her relationship with those listed actors. In cases where the researcher is not aware of the names of actors within a network, the respondent actor has the liberty to generate a list of actors they have a specific tie with. In the fixed choice format, the actor is provided with a fixed list of names (or choices) and "each actor has a fixed maximum number of ties to the other actors in the set of actors" (Wasserman & Faust, 2009, p. 47). Obviously, if there are no restrictions on the number of nominations the actor can make,

the instrument is termed free choice where the actor ranks the social ties with other actors within that network to determine the intensity of the ties between actors.

Measuring and organizing network data. As the focus of a network study is on the relational ties between those actors; analysis of this social network data requires a completely different methodology which can "be viewed as a broadening or generalization of standard data analytic techniques and applied statistics" (Wasserman & Faust, 2009, p. 21). Prior to data analysis, usually through software programs, the data is stored in a logical form that can then be converted into a computer file. The most common form is data matrix, such as in a simple table where each row represents the case studied, and each row represents the variables being measured (such as age, gender, and other related demography). The nature of the variables will determine the chosen analytic approach – of which there are two. The composition variables "are measurements of actor attributes" (Wasserman & Faust, 2009, p. 29). These attributes can include age, gender, race, or ethnicity of the actor. Structural variables are measurements taken from pairs of actors. For example, structural variables can be ties between two specific actors such as mentoring relationships between and mentor and a mentee.

Sociograms and Graphs

Density. A central concept of graph theory is density. Density represents the general connections between points (or actors) in a graph. The purpose of density is to identify the overall level of connectedness in a particular network. Determining the level of density involves "the inclusiveness of the graph and the sum of degrees of its points" (Scott, 2017, p. 81). Inclusiveness is determined by the number of points that are connected in the different parts of the graph. Obviously, it does not include isolated

points because isolated points have no connections and cannot, therefore, contribute to the density of the graph (Scott, 2017). As such, the density of a graph increases as the degree of the points (connections of a point with other points) increases. The second requirement for measuring density is the presence of a complete graph where "all the points are adjacent to one another: each point is connected directly to every other point" (Scott, 2017, p. 81). Density can be used for the analysis of both whole-network and egonets network (Scott, 2017, p. 87). Specifically, density represents the number of actual ties in a network divided by the number of ties that are possible if all actors shared ties with each other.

Centrality and centralization. Another crucial element to sociograms and graphs is an actor's centrality. An actor is centrally based when he or she is known to other actors in the network and has extensive relationships (or a large number of ties) within the network. Centrality is determined by calculating the direct, indirect, and adjacent paths that connect the intermediaries in a direct, or indirect, or adjacent pattern (Friedkin, 1991; Wasserman & Faust, 2009). Therefore, based on these calculations, an actor can either be centrality visible or prestige visible (Wasserman & Faust, 2009). Centrality is based on the idea of network flow, motivated by the concept "that a person who is close to others (or who has ties with many others) will have access to more information…have higher status…have more power…greater prestige…or have greater influence than others" (Freeman, Borgatti, & White, 1991, p. 141).

Cores and cliques. Cliques are the informal relations individuals maintain with others who share similar norms and values within a network (Scott, 2017). These connections define an individual's identity and his/her existence in the group or network.

A clique implies a particular mutuality or closeness among members of that clique or group. Cliques are identified by a set of points in a line connecting every possible pair of points. Understanding cliques helps to identify the core and the periphery members of the group.

Part III: Mentoring and Social Network

Social Network Research in Education

Social relationships have played an important role in educational practice and research and have gained prominence in pursuit of increasing student performance and instructional quality (Moolenaar & Daly, 2012). Social network is emerging as a bona fide methodology to study the role and structure of networks in districts and schools (Spillane & Kim, 2012). Social network research in education began with an interest on educational leadership and has expanded into teacher professional development networks. This line of research has extended to investigations on how social relationship can benefit teacher professional development and the role of teacher networks in achieving change (Coburn, Russell, Kaufman, & Stein, 2012; McLaughlin & Talbert, 2006; Penuel, Sun, Frank, & Gallagher, 2012). There has also been increasing interest in how social network, through teacher professional development, relationships, and collaboration, can support student achievement (Goddard, Goddard, & Tschannen-Moran, 2007; Moolenaar, 2012) and school improvement (Fullan, 1992).

In recent years, scholars have expanded their research agenda to include social network application in teacher collaboration (Daly & Finnigan, 2010, 2012; Daly, 2015; Daly, Moolenaar, Bolivar, & Burke, 2010). This new wave of research attempts to identify patterns within these social relationships which can offer invaluable insight into

the forms and degrees teacher collaboration occurs (Moolenaar, 2012). In mentoring relationships, for example, resources are accessed through ties, but the underlying social structure determines the type, access, and flow of resources to actors in the network resulting from continuous interactions and ongoing negotiations (Daly & Finnigan, 2010; Kolleck, 2016). Social network research offers researchers and policymakers a relational, yet multidimensional, perspective on how teachers interact within the respective environment, how they collaborate, and how they learn from each other (Moolenaar, 2012).

Research in social network has also provided crucial data on the concepts of professional learning communities, and the induction of novice teachers (Moolenaar, 2012). With regards new teacher induction, research is "strongly rooted in individual interactions and networks", and having an understanding of these relational ties can only enhance teacher support and teacher retention (Daly & Finnigan, 2010, p. 116). According to Penuel, Riel, Krause, and Frank (2009) there are two streams of social network research in education. The first stream, ego network approach, examines connections embedded between individuals, such as teacher collaboration across districts or schools, and developing new curriculum guidelines, rubrics, or lesson strategies (Moolenaar, 2012). The second stream of network research, whole network approach, in the education field examines teacher collaboration and how teacher relationships affect their instructional practice and student learning (Moolenaar, 2012; Penuel, Riel, Krause, & Frank, 2009).

Based on the above streams, social network research typically examines whole networks where participants provide information on who they interact with. There are

pros and cons to the whole network and the ego network studies. The whole network study can be challenging as it requires an 80% response rate and is also restricted by formal boundaries. On the other hand, ego network studies extend beyond the formal or imposed relationship boundaries, which educators can develop during the course of their career. However, ego networks are not as detailed on the structural characteristics of the network which result in limited information about the relational activity or the individual's behavior (Moolenaar, 2012).

Social Networks in Schools

How social networks benefit schools. The idea a networked community has become a common and widely accepted form of professional support, especially for new teachers. There are various types of social support, both formal and informal, and these include professional learning communities, mentoring programs, and teacher networks (Baker-Doyle, 2011). All network supports have the common goal of providing teacher professional development which can be delivered either in a mandated format or be informal and self-directed by teachers (Lom & Sullenger, 2011). Teacher networks are crucial cogs in the implementation of reforms and organizational change as they can draw on local norms and knowledge to implement new instructional practices as demanded by the educational reforms (Frank, Lo, & Sun, 2014). However, given that successfully implementing these supper systems remains the most challenging issue in education, Bridwell-Mitchell and Cooc (2016) recommended that district leaders and policy makers should realize that formal and informal organizational conditions go hand-in-hand. When teachers implement new teaching practices in the classroom, their first point of contact

for advice and knowledge is with other teachers who share similar characteristics (Bridwell-Mitchell & Cooc, 2016).

The relationships that teachers develop within their collegial networks are crucial sources of social capital which is defined as a set of material, social, and cognitive resources that are accessed either directly or indirectly through the network relationships (Lin, 2001). That is, the social capital developed and maintained by and between teachers supplement their formal experiences. When these experiences are positive, they not only help in improving schools but they also help retain teachers (Ingersoll, 2001). In turn, these social resources affect the teachers' behaviors, including the implementation of reforms (Coburn & Russell, 2008; Frank, Lo, & Sun, 2014). By having a better understanding how educators and administrators develop, maintain, or undermine these informal collegial relationships provides insight into how social capital can sustain education reforms (Bridwell-Mitchell & Cooc, 2016). This knowledge is useful in developing policies that promote strong teacher leadership and community cohesion and interaction (Bridwell-Mitchell & Cooc, 2016). As such, education polices and reforms should effectively balance between the quantity (Spillane, Kim, & Frank, 2012) and the quality of these relationships (Van Waes, Van den Bossche, Moolenaar, De Maeyer, & Van Petegem, 2015) and the flow of social resources (Carolan, 2014).

Instrumental and expressive relationships. Network analysis examines the structure of the relationships to meet a variety of needs, such as emotional or social needs, or the intellectual demands of a job. These work relationships often develop into personal relationships. According to Moolenaar (2012), there are two types of relationships in school networks. Expressive relationships involve "more affective-laden

relationships" that are not particularly work-related and, rather, the individual's interest is placed above the organization's interests. Examples of expressive relationships are personal guidance or friendships which tend to be more durable, stronger, and more trusting (Moolenaar, 2012). Instrumental relationships, on the other hand, tend to develop from a work-related perspective where work-related goals are the focus. Examples of such relationships include the exchange of information for reform and instructional materials (Moolenaar, 2012, p. 14).

While there is general agreement that networks are different in depth and content; there is differing opinion among current research as to which type of relationship, expressive or instrumental relationship, is more prevalent among teachers (Moolenaar, 2012). Some studies showcase a denser connection between teachers in expressive relations than in instrumental relationships (Dorner, Spillane, & Pustejovsky, 2011). These relationships develop organically and spontaneously as teachers seek out each other for advice regarding different aspects of their work or to discuss the best ideas for lessons plans. These work-related relationships can then evolve into informal relationships both within and outside the school setting (Dorner, Spillane & Pustejovsky, 2011). Another body of research argues that teachers are more closely connected through formal, work-related engagements than through personal relationships (Daly, Moolenaar, Bolivar, & Burke, 2010). These formal social structures have become part of recent studies emphasizing their importance in facilitating the implementation of system-wide reforms and understanding how these social interactions may affect these reforms in the long-term (Daly, Moolenaar, Bolivar, & Burke, 2010). Despite these differing findings in research, what is abundantly clear is the significance of these relational linkages in

education and the role of teacher networks in education reform, teacher development, and organizational change.

How social engagement is shaped by school environment. Teacher networks are influenced by a variety of factors, such as school culture and school policies which can be conducive to a collaborative working environment (Berry, Smylie, & Fuller, 2008; Johnson, 2006). The type of teacher support is a determining factor in teacher retention and student achievement (Ladd, 2009; 2011). In other cases, school culture can also undermine the opportunity for positive relationship development. Deal, Purinton, and Waetjen (2008) explained that culture is shaped by human interactions, such as how teachers operate, through subtle codes and cues that eventually affect the school's procedures and eventual education outcome. For example, where school culture places more emphasis on test scores, teachers, especially new teachers, may be inclined to avoid meetings or develop agendas for teacher collaboration. In such cases, the opportunity for teacher collaboration is put on the backburner and gives the impression that teacher support network is minute. These weaker relationships are reflective of an outcome-based school environment (Baker-Doyle, 2011). In these environments, teachers are unable to seek answers to their own questions, are prevented from seeking support, and are offered only minimal opportunity to collaborate, (Kardos, Johnson, Peske, Kauffman, & Liu, 2001).

An ideal situation would feature a novice teacher-centered environment including "social support networks…through active collaboration on teacher's own problems" (Baker-Doyle, 2011, p. 33). However, this type of environment requires the administrators, the staff, and the teachers to be supportive of innovation and encouraging

of intellectual inquiry (Vangrieken, Dochy, Raes, & Kyndt, 2015). Organizational and political resistance for this support can lead to negative interactions which impede the exchange of information and reinforce a cycle of negative responses (Daly, Moolenaar, Liou, Tuytens, & Del Fresno, 2015). These unintended outcomes emphasize the challenges of developing and maintaining supportive and open teacher networks. Therefore, while schools are intent on providing professional development opportunities for new teachers, these conditions are dependent on a willingness by novice teachers to collaborate and acknowledgement by administrators of the benefits of collaborative environments (Stephenson, Warnick, & Tarpley, 2008). Baker-Doyle (2012) also explained that when novice teachers are resistant to networking opportunities, they become isolated cogs in a complex network, and they become frustrated by minimal feedback and the opportunity to reflect on teaching work (Baker-Doyle, 2012). From an administrative perspective, Vangrieken, Dochy, Raes, and Kyndt (2015) touched upon group cohesion, physical proximity to others in the group, minimal turnover of staff, and the frequency of formal interactions as necessary for collaborative environments.

Social Networks and Student Learning

Studies examining social networks in schools show a correlation between the relationships teachers develop in their networks and increased student achievement (Lomos, Hofman, & Bosker, 2011; Pil & Leana, 2009; Wood, 2007). Not only should teachers have access to, but they also apply, these new resources and information towards enhancing their instructional goals (Pil & Leana, 2009; Yasumoto, Uekawa, & Bidwell, 2001). Daly, Moolenaar, Der-Martirosian, Canrinus, and Chrispeels (2011) also stated that the combination of social capital together with human capital has an even greater

effect on student success than either one alone. This finding suggests that the greater the collaboration between teachers, the more resources are available and shared, then the stronger the emerging effect will be on student achievement. Moolenaar, Sleegers, and Daly (2012) also suggested that well-connected teacher networks resulted in increased teacher collective efficacy and that collective efficacy positively influences student achievement. These studies underline the importance of social networks between teachers not only because they influence teacher efficacy but also because they stimulate new knowledge and innovative practices with the common goal of improving instruction and student success.

Social Networks and New Teacher Mentoring

Support to novice teachers. Berry, Hopkins-Thompson, and Hoke (2002) explained that teachers will never know everything on their first day on the job. In most cases, the novice teacher has to re-evaluate his or her responsibilities and realities as they attempt to integrate within the school culture. Wilson and Demetriou (2007) asserted that the challenge of transitioning from a school context into an actual classroom is more challenging for a novice teacher than is understood. The difficulty in transmitting knowledge learned in one social context into a different context is often underestimated (Wilson & Demetriou, 2008). In order to overcome these limitations, novice teachers should be allowed to learn on the job and "develop a deeper understanding of the process of teaching and learning" to enable them to flourish (Wilson and Demetriou, 2008, p. 227). Learning and teaching can be an isolationist experience when new teachers are unaware or do not comprehend the importance of developing and maintaining these social communities (Baker-Doyle, 2012). Coburn and Russell (2008) explained that such

support, through professional development, mentoring networks, or professional communities offer novice teachers the opportunity to exchange ideas and information and improve instructional content.

Research reveals that, for novice teachers, significantly more informal learning takes place than formal learning. Informal learning can take place through contact outside the school with experienced teachers and incidental dialogue with their colleagues (Wilson & Demetriou, 2008). Lasky (2005) encouraged that these collegial contacts and dialogue be developed and sustained in order to reinforce the support system crucial to new teachers. Similar thoughts have been echoed by the New Teacher Center (2007) which recommended that professional development programs for new teachers "move beyond informal mentoring that provides periodic or haphazard logistical and psychological support to new teachers" (p. 2).

One approach to reinforcing professional development and sustaining support for novice teachers is through mentoring networks, where educators can navigate the intricate labyrinth in education through relationships that emerge from mentoring programs. The outcome of a mentoring relationship is influenced by a network of ties, formal and informal, which "may ultimately moderate, influence, or even determine the direction, speed, and depth of a planned change because change processes emerge and are maintained through interpersonal relationships…change occurs through the interaction of participants" (Daly & Finnigan, 2010, p. 115). Teacher networks are becoming a powerful form of teacher learning (Darling-Hammond, & McLaughlin, 2011), and they have been described as "powerful learning tools [that] engage people in collective work on authentic problems…allowing them to get beyond the dynamic

of….schools….[working] face to face with other people and other possibilities" (Darling-Hammond, & McLaughlin, 2011, p. 85).

Sharing pertinent information. Another key concept of teacher networks is the opportunity to share and grasp new knowledge. Teacher networks are practical sources of knowledge for teachers, and a successful support network is flexible enough to have a positive impact on new teachers (Baker-Doyle & Yoon, 2011). For example, networks open the opportunity to new concepts and ideas, teachers are encouraged to share tacit and complex knowledge. This knowledge exchange, in turn, enhances their understanding and perception of specific teaching practices (Baker-Doyle & Yoon, 2011).

These interpersonal relationships also encourage the flow of information, not only between employees, but the exchange of information and resources also improves the functioning of the organization (Daly & Finnigan, 2012). However, Bridwell-Mitchell and Cooc (2016) also reflected upon the limitations these community dynamics may impose on the network. For example, while teachers tend to become relationally close, there are downsides to the network becoming too close or developing into a closed community which can impact the exchange of tacit information and knowledge (Moolenaar & Sleegers, 2010). Granovetter (1973) explained that when relationships become too close, teachers are more insular, closed to information flowing from external sources, and unwilling to implement new ideas. Bridwell-Mitchell and Cooc (2016) reported that sometimes these closed social ties may actually constrict teacher development by undermining innovative ideas on instruction and teachers "may be less likely to come up with new ideas because of their increasing similarity" (p. 15). Repeated

exposure to the same information can minimize the transfer of information with other teachers outside the community resulting in unproductivity (Bridwell-Mitchell, 2015). As such, open networks would generate more open access to new information and encourage new teachers to be open to new innovation (Baker-Doyle & Yoon, 2011).

Openness to new ideas and concepts. While every teacher enters the profession with his/her own ideas and concepts, informal networks can be another social form of influence in shaping the novice teacher's learning and teaching experiences on the job. Being part of an informal community of learners provides novice teachers with support and resources as well as collegial connections (Fox, Wilson, & Deaney, 2011). These informal relationships also offer novice teachers a positive perspective on their teaching practices and career decisions (Fox, Wilson, & Deaney, 2011).

Pogodzinski (2014) explained that novice teachers prefer to engage in both formal and informal relationships when dealing with any issues and concerns that may arise at the workplace. It should be noted that while administrators have significant influence over the teacher's working conditions, they have minimal direct impact over the novice teacher's evaluations and work assignments (Youngs, 2007). Rather it is the teacher's own interactions in formal or informal relationships that have a direct impact on their eventual performance and their commitment to the profession (Coburn & Russell, 2008). As such, when novice teachers are able to leverage their connections, they are "better able to access and make use of the individual and collective resources in their professional network" (Daly & Finnigan, 2010, p. 363). Continued participation in these mentoring networks allows novice teachers to become active participants in their ongoing professional development. This transformative process encourages teachers to take

ownership of their decisions. Having that capacity and agency gives novice teachers control of their careers which they are constantly seeking (Biesta, Field, Goodson, Hodkinson, & Macleod, 2008; Fox, Wilson, & Deaney, 2011). Educators tend to feel safe in an environment that fosters innovation and are confident enough to experiment with new teaching practices without fear of ridicule from their colleagues (Moolenaar & Sleegers, 2010).

However, Baker-Doyle and Yoon (2012) noted that these opportunities, especially in informal networks, are dependent on the novice teacher's ability and willingness to be open to these new ideas and concepts. It is typically the novice teacher's responsibility to be proactive if they wish to expand their learning environment, especially at the start of their career (Fox, Wilson, & Deaney, 2011). Research indicates that personal traits will determine whether the person engages in a positive or negative relationship with others in the network (Daly, et al., 2015). A person with trust issues and lower expectation in innovation is more likely to engage in negative relationships (Daly et al., 2015).

Modifying and enhancing teaching practices. Through informal relationships, novice teachers have access to ideas and concepts that have been tested by their veteran colleagues, but these ideas can be modified to meet the respective situation and the individual's approach to learning. Mushayikwa and Lubben (2009) reported that these informal interactions introduced novice teachers to new teaching practices. In their research, Hoekstra, Brekelmans, Beijaard, and Korthagen (2009) explained that while there were minimal observed changes in teachers' behavior from informal learning, the latter did appear to have more effect on the teachers' openness to new teaching methods and ideas. Interestingly, novice teacher's openness to new knowledge was dependent on

whether the informal relationships interfered with his/her teaching work (Pogodzinski, 2013). This perception relates to the increasing workload being placed on teachers, especially new teachers, such as compliance requirements and accountability policies.

Therefore, informal mentors can share their established knowledge to help novice teachers balance these burdensome administrative duties and their daily instructional requirements (Mushayikwa & Lubben, 2009; Pogodzinski, 2013). These social network interactions, not only provide teachers with much needed support, but they also provide the opportunity for them to share and receive invaluable information (Duyar, Gumus, & Sukru Bellibas, 2013). Of course, the individual's position (or location) within that network will determine the level of access to information and influence the teacher will have (de Jong, Moolenar, Osagie, & Phielix, 2016). When an individual is centrally located, the more access to information and influence that person will have (Balkundi & Harrison, 2006). These interactions within a collaborative network allow teachers to motivate each other through verbal persuasions or share their vicarious experiences.

Part IV: Social Network Theory

Applications and Assumptions of Social Network Theory

When it comes to the study of social networks, there are several theoretical frameworks that have been linked to this particular methodology, including social network theory and social capital theory. Social network theory, originating from social psychology, explores the formation of social networks (Mujis, Ainscow, Chapman, & West, 2011). There has been increasing interest in the importance of collaboration in the workplace, particularly as it has gained traction in other fields, including education. As accountability and improved teaching quality is receiving increasing attention in k-12

education, network research has influenced the shift from individualist understandings to more on relational and contextual understandings (Van Waes, Van den Bossche, Moolenaar, De Maeyer, & Van Petegem, 2015).

Social network theory examines the patterns of the social ties between individuals within the same network (Daly, Moolenaar, Liou, Tuytens, & Del Fresno, 2015), and it explains the nature and roles of these interactions (Scott, 2004). Baker-Doyle (2012) explained that social network theory assumes that support (in the form of social capital), resources, and information can be exchanged in relationships between individuals. This theoretical lens has expanded k-12 education research by establishing its importance in professional development programs (Baker-Doyle & Yoon, 2011), school leadership (Pitts & Spillane, 2009), policy reform and implementation (Coburn, Russell, Kaufman, & Stein, 2012), and school improvement and reform (Penuel, Riel, Krause, & Frank, 2009). Social network theory provides a lens to analyze the networking activities or the professional interactions in different settings, such as in a mentoring program (Daly, 2015, Moolenaar, 2012).

According to Daly, et al. (2015), there are four critical aspects in social network theory. First, actors are assumed to be interconnected and interdependent (Wasserman & Faust, 1999). An individual's access to resources is significantly influenced by his/her performance, behavior, and location within the network (Van Waes, Van den Bossche, Moolenaar, De Maeyer, & Van Petegem, 2015). Second, relationships, or ties, allow the flow and exchange of resources (or the assets in the network) between actors (Burt, 1997). This assumption views social capital as a community-held asset, and social network analysis is applied to examine ties between individuals in the social network

(Baker-Doyle, 2012). Thirdly, the flow of resources to and from the individual is influenced by the network structure. Lastly, social networks can either constrain the flow and exchange of information or it can yield opportunities for collective action or for the individual. Social capital, or embedded resources, is the common theme between these assumptions and is explained further below.

Social Capital

Lin (2005) defined social capital "as resources embedded in one's social networks, resources that can be accessed or mobilized through ties in the network" (p. 4). Farr, on the other hand, defined social capital as a "network of associations, activities, or relations that bind people together…via certain norms and psychological capacities, notably trust, which are essential for civil society and productive of future collective action or goods" (2004, p. 9). The general premise within those definitions is that social capital is network-based. Coleman (1990) provided a more functional application of social capital by stating that social capital is "a variety of different entities having two characteristics in common: [first, that they] consist of some aspect of a social structure and [second] they facilitate certain actions of individuals…within the structure" (p. 302). Social structure and the trust element provide the individual with a sense of belonging to a community. In turn, the individual is able to draw upon the community for support to achieve specific outcomes.

According to Mujis, Ainscow, Chapman, and West (2011), social capital is comprised of three main elements. The first is that resources are embedded in a social context. The second is that these resources can be mobilized or accessed. Lastly, resources are utilized in purposive action. Therefore, social capital requires elements of

embedded resources and location of individuals within the network leading to social outcomes. In other words, social capital allows for the accessibility or mobilization of these embedded resources (Lin, 2005). These resources can be applied by actors to meet their respective interests (Coleman, 1990). In general terms, social capital focuses on the value of collective action in order to achieve a specific goal. However, Coleman (1988c) emphasized that trustworthiness and trust are crucial ingredients of social capital in order to facilitate such transactions (p. 392).

Limitations of Social Capital

Lin (2001) has also attempted to overcome the limitations surrounding social capital by trying to conceptualize a common form of measurements for social capital assets in a network. He first looked at whether embedded resources in the network benefit the group or the individual. From the individual's perspective, one will engage in networking and invest in interactions with the understanding that these activities will yield profits (Lin, 1999; 2001). For example, an individual will be motivated by the ability to access and mobilize resources to find a better job through specific instrumental actions (Lin, 1999). As such, social capital is human capital where the individual has the ability to access these resources and display instrumental actions that will reap some profit or benefit (Lin, 1999). This line of thought is supported by Burt (1997) who described that entrepreneurial opportunities enhance an individual's value.

Another issue Lin (1999) looked at was whether the individual's returns benefited the entire network or not. As such, is the individual's social capital assessed in terms of accessibility or in terms of mobilization? Can it be both, or does it have to be "either/or?" Lin (1999) discussed that, while not neglecting the importance of the individual in the

eventual payoff from social capital, there are instances where the production and the maintenance of the collective asset is given more weight above the individual interest (p. 32). According to Lin (1999), this situation tends to be common in closed or dense networks where the collective capital is preserved and reproduced as a collective. There is also confusion in the measurement and theoretical application of social capital (Lin, 1999); particularly whether closed networks are more advantageous over open networks. Bourdieu (1986) argued that closed networks are necessary to maintain the group's solidarity to ensure the group's continued domineering position and meet common goals.

However, in referring to Granovetter's (1973) concept of "strength of loose ties", Lin (1999) believed that open networks promote the presence and use of bridges or structural holes, which in turn facilitate the flow of information. In effect, an open network may benefit the group or the individual in specific situations, such as when looking for a better job where the open ties or bridges could offer valuable information to the individual (Lin, 1999). Yet, Lin (1999) also admitted that there are certain cases where closed networks may actually be more beneficial, such as preserving the status of a privileged class or by having a close-knit family.

Social capital is both its cause and its effect, meaning that it can only be captured by its effect (Coleman, 1988a). However, this also undermines the development of an effective theoretical framework. A theoretical framework that identifies the same element (i.e. social capital) for both the cause and effect risks ignoring other potential factors that could be influencing the outcome, such as family characteristics affecting the individual's opportunity for a better job. As such, Lin (1999) has called for a flexible theoretical framework that is flexible enough to consider other factors influencing outcomes. The

above controversy bleeds into the next concern relating to finding a methodology applicable across various forms of social capital. The traditional application of measuring social capital is through name-generating methodology whereby the respondent is asked to provide a list of individuals whom they typically seek advice and information from, for example. However, Lin (2005) argued that this approach focuses only on the accessible capital and misses another crucial element in the measurement of social capital: the mobilization of the social capital. In this instance, the focus is on the accessibility of the capital and leaves out how the capital is actually used (Lin, 2005).

The question then becomes whether social capital should be assessed in terms of accessibility or in terms of mobilization, and Lin (2005) contended that measuring social capital should include both. Current social capital perspectives and approaches separate the capital (or the resources) from social network, or there seems to be an assumption that resources will always be present and mobilized within a network. Lin (2005) argued that those two are not mutually exclusive because access and mobility of these social resources and the quality of these resources are dependent on the structure of these social networks or other network features. Nan Lin (2001a) stated that network location should be treated as an external element to social capital and reasoned that conceptualizing social capital should include the access and embeddedness of resources alongside social relations and network locations (p. 14). The concept of a network theory of social capital addresses the possible scenarios and definitions that incorporate both embedded resources and network locations.

Formalizing a Network Theory of Social Capital

Lin (2001a) undertook a meticulous approach in developing a network theory of social capital by addressing the potential weaknesses and controversies discussed above. Lin (2001) developed a network approach to social capital and redefined social capital by "as resources embedded in a social structure which are accessed and/or mobilized in purpose actions" (p. 35). Basically, Lin combined the structural element (which are the embedded resources), the opportunity element (which is the accessibility to these resources by the individual), and the action-oriented element (which defines the mobilization of these resources for a purposive action) in conceptualizing this new framework. Therefore, Lin (1999, 2001, 2005) has extended the concept of social capital to include the role of networks in the accessibility and mobilization of resources by combining the structural element (embedded resources) with the opportunity element (accessibility of resources by the individual) with the action-oriented element (the mobilization of resources for a purposive action).

Next, he advocated for a model theorizing social capital. The proposed model is made up of three blocks of variables (Figure 1 below) that describe the transition from the different elements and processes that influence the access of social capital to the mobilization of social capital (termed as capitalization) to the list of possible returns (which can be instrumental or expressive returns).

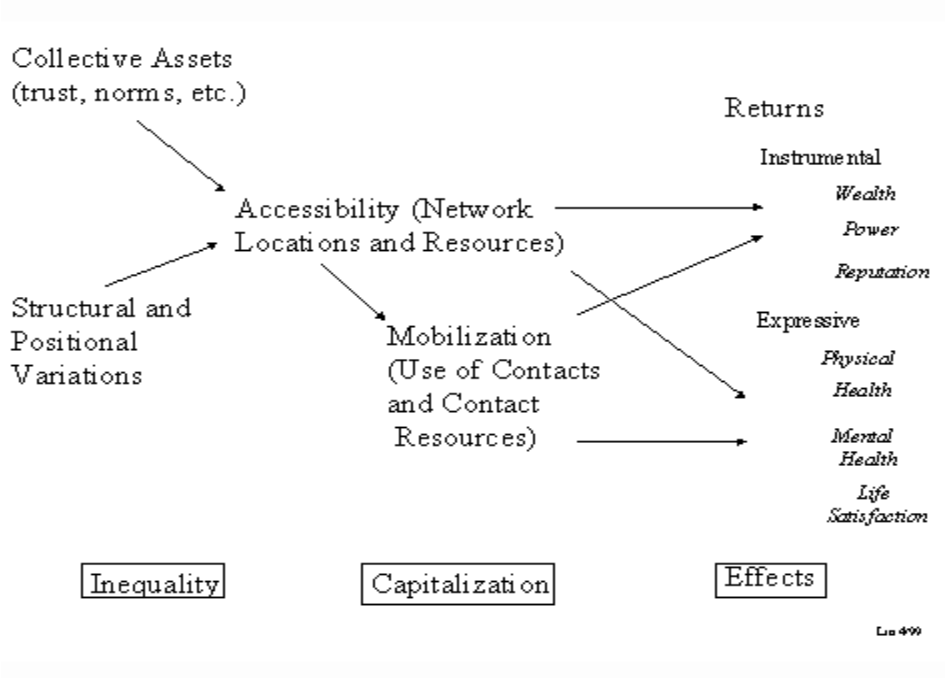

Figure 1. Model of a Network Theory of Social Capital. Adapted from "Building a Network Theory of Social Capital" by Nan Lin, 2001a, p. 21 as cited in *Social Capital Theory: Theory and Research* by Nan Lin, Karen Cook, & Ronald S. Burt, 2001 (Eds.).

Lin (2001a) presented three blocks of variables to explain how embedded resources can be accessed and/or utilized in specific actions, and social capital has three main ingredients. The first is that resources are located in a social structure. The second is that individuals, or actors, have access to these resources. The final ingredient is that these resources are mobilized by individuals with and for a specific purpose (Lin, Fu, & Hsung, 2001, p. 58). In the first block, Lin, Fu, and Hsung (2001) hypothesized how a network theory of social capital should be able to describe the different patterns of distributions of social resources that are being accessed– which conceptualized the first two ingredients of social capital as stated above. The theory clearly identifies how the variations in a person's position may affect the quantity and quality of social resources as well as the mobilization of these social resources. These elements can either encourage or constrain the access of resources within the social structure, termed as "the formation of

the inequality of social capital" (Lin, 2001a, p. 20). These two elements are causation forces because the structure of the network and the individual's position can affect opportunities to develop and manage the accessed capital.

The second block links the access of social resources to the mobilization of these social resources, which Lin (2001a) termed "social-capital mobilization" (p. 21). The second block demonstrates the presence and the interconnection of the three main ingredients of social capital (resources in a social structure, accessibility of these resources by the individual, and the mobilization of these resources for a specific purpose). This process addresses the inequality of social capital (which can be present in the first block) by questioning whether an individual has been able to/or is able to access and mobilize social resources for a specific purpose as a result of the inequality of social resources. The process, capitalization, provides the opportunity for an individual to have better access to accessible embedded resources. The individual, in turn, will then be able to mobilize these resources for a purposive action (Lin, 2001a, p. 21). Lin (2001a) explained that this is typically the case when the individual has an advantageous position in the network, has access to a bridge (or contact) that yields better outcomes, or awareness of the structural advantage by the said individual and the direct use of embedded resources, thereby leading to the mobilization of better resources by the individual. This concept is demonstrated by the following hypotheses:

> "*Effect Hypothesis 1*: The greater the embedded resources accessible by an individual, the better the individual's well-being.
>
> *Effect Hypothesis 2*: The better embedded resources mobilized by an individual, the better the outcome of an individual's purposive action"

(Lin, Fu, and Hsung, 2001, p. 59).

The third block demonstrates different outcomes, depending on whether the social capital has been mobilized (use of contacts and resources) or accessed (through resources and network locations) or both. This process emphasizes and proposes a causal sequence of how embedded resources limit or enable an individual's actions and choices. It is from this concept that Lin, Fu, and Hsung (2001) developed a third hypothesis – the "*Process Hypothesis*: The better the accessible resources, the better embedded resources can and will be mobilized in purposive actions by an individual" (p. 59).

What Lin (2001a, Lin, Fu, & Hsung, 2001) has done is extend the traditional notion of social capital to include new concepts that influence the act of investment of social resources and the expected returns. The first is that social capital can be influenced by structural or positional elements. Structural elements are the physical and emotional elements influencing access to these social resources, such as the natural and physical resources available, the level of education of the network, and the network's cultural and ideological diversity. The second concept includes elements affecting the mobilization of these social resources, the action-oriented elements (Lin, Fu, & Hsung, 2001, pp. 58-59). Effectively, the individual's economic, political, cultural, and social position and affiliations will dictate the quantity of the accessed resources.

Lin's (2005) network theory of social capital recognizes the importance of patterns in relationships, which can differ in terms of reciprocity and intensity. The theory addresses the dual purpose of social capital. The first is instrumental purpose, and the second is expressive purpose of social capital. In expressive purposive action, the objective is to retain resources already possessed by the actor, such as mental health and

life satisfaction. The objective of instrumental purpose, on the other hand, is to acquire external resources not possessed by the actor; depending upon the bonding and binding relations in the network.

Lin's (2001a, 2005) conceptual framework also addresses the issue of whether social capital benefits only the individual or the network by including different levels of analysis for social capital. The mesostructural level demonstrates how an individual's access to embedded resources would differ from another individual. This process is influenced by the action-oriented elements. The microaction level focuses on the use of embedded resources by the individual to obtain or access resources not previously possessed (Lin, 2001a, p. 23; Lin, Fu, & Hsung, 2001, pp. 58). This framework, while nascent, offers the opportunity to study different networks, including mentoring relationship, and to determine how these relationships enhance or constrain the access and/or application of available resources. An emerging area of interest is the study of mentoring relationships and how social capital can be accessed and used by novice teachers as was discussed in the previous section.

Summary

This literature review provided foundational information on the importance of social networks in mentoring programs to support novice teachers. I began with a description of the challenges novice teachers experience early in their career and the consequences of early career teacher attrition. I then introduced mentoring programs as essential to the professional development of novice teachers, particularly during the first years of their career. I continued the review with a discussion on social network analysis and its development. Social network analysis will be applied to this research to examine

the relationship networks embedded in the New Teacher Center mentoring program. Social network analysis will explain the patterns present in these relationships, including the directionality and the strength of the relationships across the respective school sites.

The next section is a review of the theoretical framework that will be applied to study the interactions between the participants in the mentoring program. The framework will help to reveal and understand the different patterns in the mentoring relationships. The section also provides a discussion on the development of this theoretical framework as well as its application in different fields, including the education field. The chapter ends with a discussion on the development of social network analysis in education. I also discuss the different forms of networks in schools and how these networks can benefit the development of students and teachers. With particular focus on the latter, I end with a discussion on how social networks can have a positive impact on the professional development of novice teachers.

CHAPTER III

METHODOLOGY

This chapter describes the research design and the methodology applied in this case study. The chapter includes a restatement of the research problem and research questions, and a description of the research design. The chapter ends with a description of the procedures for data collection and data analysis.

Research Problem

Within the changing educational landscape, the role of the educator in the 21st century has become highly involved and stressful, especially for novice teachers. Given the high movement of teachers, including their exit from the teaching profession, there has never been greater need for effective mentoring programs to smooth the transition process for new teachers, reducing teacher attrition, and maximizing satisfaction at work (Andrews & Quinn, 2005; Archer, 2003; Stanulis & Floden, 2009).

Research on teacher professional development indicates that mentoring has been successful in some cases (Bullough, 2005; Lindgren, 2005) and not successful in other cases (Jacobson, 2007; Sundli, 2007). One possible reason for this anomaly may be the absence of social structure that supports the exchange of resources and information between educators in mentoring programs (Jordan, 2006). Enhancing the relationship structure within these mentoring networks could, potentially, be a powerful contributing factor to teacher success and retention.

Purpose of the Study

This comparative case study examined the pattern of mentoring relationships embedded in the NTC mentoring programs at two schools in a large, urban district in the Midwest. This study sought to explore patterns of relationship networks established in these NTC programs; including patterns of relationships between actors in the program, the directionality of relationships, and strength of relationships across the program at each school site. Additionally, this study examined participants' perceptions about the resources embedded within the social networks in the program.

Research Questions

The following research questions guided my case study.

1. What is the underlying social network structure of support for new teachers at each respective school?
2. How is the New Teacher Center Induction Program represented in this network structure?
3. What does the network structure suggest about the flow of communication and capacity for new teachers to develop professionally?
4. What are participants' perceptions of the resources embedded within this social network?
    a. How do new teachers perceive the mentorship they receive from the New Teacher Center Induction and Mentoring Program?
    b. What other resources do novice teachers perceive as important outside of the New Teacher Center?
5. How does social network theory explain these findings?

Research Design

Mentoring relationships can be complex, yet powerful, experiences for both mentor and mentee. Therefore, the qualitative approach is designed to better understand those complexities. Having a better understanding of those mentoring relationships requires a thick description of these mentoring relationships and the NTC mentoring program. As emphasized by Merriam (1998), "Research is, after all, producing knowledge about the world" (p. 3). Complex knowledge and understandings cannot be gleaned and communicated through surveys. Patton (2002) also added that "given the qualitative emphasis on striving for depth of understanding, in context, attitude surveys, and psychological tests are inadequate for revealing inner perspectives" (p. 48).

Meriam (1998) stated that "understanding the meaning of the process or experience constitutes the knowledge to be gained from an inductive…mode of inquiry" (p. 4). As such, a qualitative case study was the research design of choice, and I added social network analysis as a means to get a deeper understanding and insight of the relationship patterns in the NTC program. A case study methodology is designed to ask the "how," "what," and "why" questions. The goal of the research questions for this study is to gain a deeper understanding on the social networks developed between mentors and mentees involved in the NTC mentoring program. This design approach allows "the researcher, as the primary instrument of data collection and analysis" (Merriam, 1998, p. 11) to provide a deeper insight into these relationships that quantitative approaches alone cannot provide, and I will attempt to capture their perspectives in an unbiased manner. The case study will also include social network analysis to evaluate the relationship patterns between the stakeholders in the NTC program as well as the directionality and

strength of these relationships. The flexibility of a qualitative case study also allows the researcher to collect data even as it emerges (Erlandson, Harris, Skipper, & Allen, 1993; Patton, 2002).

Social network theory guided the theoretical approach of this dissertation. Constructionism was the epistemological approach in this research whereby reality "and the implications of those constructions for their lives and interactions with others" are constructed by the participants (Patton, 2002, p. 96). As such, knowledge will guide "every step of the investigation process" (Yazan, 2015, p. 136). The constructionist view "claims that meanings are constructed by human beings as they engage with the world they are interpreting" (Crotty, 1998, p. 43). In this research, reality is constructed by the lived experiences of mentors and mentees, how they interpret their experiences in the mentoring program, and how they make sense of it all (Crotty, 1998).

Methodological Procedures

Setting and Population Selection

The New Teacher Center is a non-profit organization based in California, dedicated towards strengthening the practices of new teachers. It was established in 1988 and its founder, Ellen Moir, is a nationally-recognized leader in providing support early in the career of novice teachers. Moir's work also involves research on induction programs, consulting with educational leaders, school districts, organizations, and policymakers throughout the country on issues relating to new teacher support. NTC Teacher Induction Program is a support program for new teachers that many other school districts across the country are using (New Teacher Center, 2011).

Based on the purpose statement and research questions, I chose a school district that was applying the New Teacher Center mentoring program. The district also needed to be a large school district so as to increase the chances of novice teachers being hired and, therefore, increasing the number of new teachers and mentors participating in the program. From these criteria, I chose Allegiant School District. Allegiant School District was chosen because it is collaborating with New Teacher Center (NTC) as part of their new teacher mentor program. Allegiant School District (ASD) serves approximately 38,000 students in 86 schools, with the majority being elementary schools (51 schools). Allegiant also includes 14 middle schools and 11 high schools. It is a large, urban school district employing about 7,000 people in 88 campuses, and is in a Mid-western state.

The NTC Induction Program in Allegiant School District

The school district provides two forms of support to novice teachers. The first is building-based support where novice teachers are assigned instructional coaches who are appointed by the building principals. The other is the district-level support provided to novice teachers through mentors. The New Teacher Center Teacher Induction Program focuses on the mentor support, and Allegiant School District follows the NTC model with full-time mentors who are assigned by the district and not attached to any building. Therefore, the NTC represents a centralized approach to mentorship. The purpose of the centralized approach is to offer mentors the flexibility to work with their assigned mentees, allowing mentors the time to plan, conduct observations, and provide feedback. The typical caseload is approximately one mentor to 10 to 13 mentees, and NTC recommends no more than 15 mentees for full-time mentors (New Teacher Center,

2017b). This load is considered manageable and teacher-centered (New Teacher Center, 2017b).

The New Teacher Center focuses on improving student performance by accelerating teacher effectiveness and retention. The New Teacher Center's approach is to provide educators the resources and support required to ensuring their success as well as improving student learning (New Teacher Center, 2017a). The mentors are typically accomplished veteran teachers who agree to become full release mentors for two to three years (Hanson & Moir, 2008). The mentors are trained on the NTC Teacher Induction Program at the start of the school year with recurrent trainings throughout the year (New Teacher Center, 2017c). The mentors are provided with a training manual which covers all modules of the NTC mentoring program. At the start of the fall semester, novice teachers also receive three days of pre-service training, and this training continues throughout their first year at ASD. The Allegiant School District (ASD) mentors are expected to meet with their mentees three to four times a month, and each meeting is to last about 45 minutes to an hour. Most of the meetings with the district-based mentors are conducted on the school campus, and the time spent ensures that as much feedback is provided as possible without any time constraints. The mentor observations provide a sense of accountability, transparency, and serve as a form of inquiry to improve the mentee's teaching effectiveness (New Teacher Center, 2011). The mentor and novice teacher collaborate to set monthly goals specific to the mentee's specific needs, and the mentee is charged with meeting those goals. During these sessions, the goal is for the novice teacher to feel comfortable with the level of feedback from the accomplished veteran teacher.

NTC recommends a high-impact mentoring program rolled out over the first two years of a novice teacher's profession. At the moment, ASD's mentoring program is available to novice teachers for only one year – their first year of teaching. If the teacher is new to the school district but has previous experience, then the mentoring program is not typically provided to that individual. ASD currently has 12 full-time mentors serving approximately 156 novice teachers for the 2017-2018 academic year; the number of novice teachers can change as teachers leave and enter the district over the course of the year. The typical caseload is 10 to 13 mentees per mentor.

Sample Selection

With 12 full-time mentors and approximately 156 novice teachers, it was not feasible to include all mentors and their mentees in the SNA survey. My research was conducted in two phases. The first phase was choosing which level of school will serve as my research site. While secondary schools are usually larger and with more teachers who tend to be more content specific in their relationships, my research site were elementary schools. This is because the Director of New Teacher Support advised that because there are more elementary schools in ASD than any other school level, the chances of acquiring a sufficient sample of participants is enhanced by choosing an elementary school site. Although social network analysis can be performed on any size of network (Scott, 2017), my desire was to select school sites with networks that are large enough to investigate the relationship structure of the network.

To locate school sites, I asked the Director of New Teacher Support of Allegiant School District, for a list of five elementary schools with the greatest number of novice teachers participating in the program. From that list, I chose two schools that best meet

the following criteria: two schools of similar student size and demography. The two schools included the same grade levels with a similar number of new teachers. Allegiant School District contacted NTC approximately six years ago and the program was implemented in a different school building whenever a school district hired a novice teacher. As such, I chose two elementary schools where the NTC program has been in place for approximately the same length of time. Additionally, because the mentors are district-based mentors, rather than building-based, I chose two schools who hired a high number of new teachers at the start of the fall 2017 semester to ensure a pool of novice teachers and their assigned mentors available for participation in this study. Therefore, the sociograms developed reflected the mentor/mentee relationship networks at these two school sites rather the network of the NTC program throughout the district. This approach allowed me to assess whether the novice teachers in these two buildings were utilizing their mentors as support for their teaching or whether these new teachers are reaching out to others in their buildings for support.

Once I received permission from the building principals, I requested names and email addresses of novice teachers working in their building and their assigned mentor. With that list, I assigned each novice teacher and mentor a code and each school building a code. I invited mentors and mentees by email to participate in a social network analysis survey. All new teachers in each building who were participating in the NTC induction program along with their assigned mentors were invited to participate in the SNA survey. Including all new teachers and their mentors, who agreed to participate, allowed me to understand the relationship patterns in these bounded networks. I distributed surveys at Elementary School A (School A) to four participants who included one mentors and three

novice teachers. From Elementary School B (School B), I distributed surveys to five participants, who included one mentor and four novice teachers.

The results of the social network analysis survey were entered into UCINET to develop relationship matrices that were used to create sociograms which were visual representations of the relationships that existed between the participants and by the participants outside the network. Following survey participation and based on the responses from the surveys, I used criterion sampling for the next phase of my study, which included one-on-one interviews and observations of meetings between mentors and their mentees. The code I assigned to the participants and to the schools assisted me identifying which novice teacher and mentor to interview. Once I identified the novice teachers and mentors, I contacted the participants by email to invite them for interviews. Criteria for selection of participants in the interview portion of the study included two mentees and their mentors, from each building, who are actively involved in the mentorship program, and two mentees and their mentors, from each building, who were not actively involved in the program. An actively involved participant was defined by numerous relationships. A participant who is not actively involved was defined by minimal connections in the network as portrayed by the sociograms.

The purposeful selection of participants for the survey and interviews was to intentionally deliver "information rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the inquiry" (Patton, 2002, p. 230). This approach "focuses on selecting information-rich cases whose study will illuminate the questions under study" (Patton, 2002, p. 230). Merriam described this approach as "based on the assumption that the investigator wants to discover, understand,

and gain insight and therefore must select a sample from which the most can be learned" (1998, p. 61).

Because this study is a comparative case study bounded in time, multiple data sources were collected and analyzed over an extended period of time to provide a deeper and richer appreciation of the phenomenon being studied (Patton, 2002). Prior to beginning my research, I had very little or no information concerning the type of mentoring relationships or the social networks the mentees had with their mentors. Additionally, I had little to no information about other individuals to whom these novice teachers turn to for support. However, this information was acquired from prolonged engagement at the school sites, observations of team meetings, observation of NTC scheduled meetings, collection and analysis of documents related to the mentorship program, and through interviews with novice teachers and their mentors. I gained a better understanding of the relationship patterns in these mentoring relationships. Sociograms revealed the directionality of these relationships. The interviews illuminated the participants' understanding about the resources embedded within the social networks of the mentoring program.

Data Collection

As the researcher, I was the primary instrument for data collection, and this process was typically "guided by questions, educated hunches, and emerging findings" (Merriam, 1998, p. 120). Data collection took place at the respective school sites which, as described by Creswell (2014), was considered a "natural setting…where participants experience the issue or problem under study" (p. 185) for qualitative research. Merriam (1998) stated that "data collection in a case study is a recursive, interactive process in

which engaging in one strategy…may lead to subsequent sources of data" (p. 134). Data analysis commenced as soon as data collection began.

As mentioned earlier, multiple data sources were utilized for this case study including SNA survey, interviews, observations, and document review. The survey responses were used to develop a matrix of relationships to create sociograms. I also conducted one-on-one interviews, observations of meetings between mentor and mentee teachers, and document review of materials used in the mentoring program. These data sources were used to triangulate and provide a deeper understanding of the matrix of relationships revealed in the sociograms. This section describes each step in the data collection process in further detail.

Surveys

The social network survey was a name generator, which is a commonly used method of data collection in social network analysis (Scott, 2004). The survey applied an open network approach, as opposed to a closed network approach, whereby participants could list anyone in their response to the specific survey question. Consequently, open networks are not considered complete networks and according to Prell (2015), "…the network data is not complete network data" which makes calculations for density and centralization of relationships difficult (pp. 66-67). The latter would have been possible with a closed network where participants would choose from a generated list of names. However, in this research, it was impossible to know "…all actors in the networks …beforehand..." (Prell, 2015, p. 118).

Each survey included demographic questions to represent the role of participant (mentor or mentee), grade level taught, age bracket, ethnicity, and gender. The reason for

including age bracket, ethnicity and gender in the demographic data was to determine whether or not these variables influence mentor/mentee relationships. For purposes of data analysis and data reporting, only recoded identifiers were used. No information that could identify the participant will be used in findings or shared with the staff or other participants' colleagues.

The social network survey consisted of two questions. The first question asked participants to list the initials of individuals to whom they go to for professional support; and for each individual listed, the participants were asked rate to the frequency of their interactions with the individuals listed and how helpful each relationship was. The second survey question asked participants to list individuals they turn to for emotional support; and they were asked to rate the frequency and importance of each individual listed. When measuring the strength of emotional support, the participants rated the frequency of contact and importance of contact. When measuring the strength of professional support, the participants rated the frequency and helpfulness of contact. Helpfulness was used to rate the professional support because I wanted to understand the professional support the participant received from the respective contact. I also wanted to understand how helpful these professional supports were to the participants. When using frequency and importance for strength of emotional support, I wanted to understand the significance of the emotional support and how valuable these relationships were to the participants. These constructs, frequency and importance (emotional support) and frequency and helpfulness (professional support) were utilized to calculate strength of the relationships as described below. Gaining a better understanding of importance of the relationship and frequency of interaction provided an understanding of strength of relational ties (Lin,

1982, 1999b). A copy of the mentor survey and the mentee survey are provided in Appendices A and B.

The name-generator social network survey instruments were physically distributed to both elementary schools. No other identifiable information was included on the survey. The first contact was through an email to the employee email addresses inviting each participant to participate in the survey. Participants were told that participation in the study is entirely voluntary and that their choice of whether or not to participate will not be disclosed to anyone other than the researcher. Potential participants were asked to respond, via email, affirming they were willing to meet with the researcher to discuss the consent document. If an individual did not wish to volunteer for the study, he/she would advise the researcher via email, and no further contact was made with that individual. All the teacher mentees and their mentors agreed to participate in the survey.

For participants who consented to participate, a meeting time, date, and location was suggested by the participants to make it convenient for them. During this meeting, the participants were asked to sign the survey consent form after I clarified the purpose of the survey. Each participant was provided with a survey packet which included a paper survey, survey consent form, and a self-addressed stamped envelope. I planned on leaving the surveys when I met with the participants so they could complete the survey at their own convenience.

When I met with the teachers from School A, I left the survey packet with them and their mentor. A week after meeting with the teacher from School A, I emailed a reminder to complete their surveys. All the completed surveys were returned to me in the

self-addressed stamped envelopes. I met with the teachers from School B and their mentors on two separate occasions to explain the purpose of my study. On both occasions, the teachers took the survey while meeting with me and returned the completed surveys directly to me. The mentor assigned to School B returned her completed survey in the self-addressed stamped envelope.

Data analysis commenced as soon as data collection began as recommended in Merriam (1998); beginning with the social network analysis survey results. I analyzed data for the social network questions using UCINET software. UCINET is used by social network researchers to analyze the structure of social networks and will generate a matrix of relationships based on the survey questions (Borgatti, Everett, & Freeman, 2002). UCINET provided a better understanding of the generated network ties. I used Netdraw, an online program, to produce visual representations of the network data that generated sociograms for each relationship matrix (Borgatti, 2002).

Interviews

Interviews are the common form of data collection in qualitative research (Patton, 2002). The interview process allows the researcher to learn "things [which they] cannot directly observe" (Patton, 2002, p. 340). Since I was unable to observe all interactions between mentors and mentees during data collection process, the one-on-one interviews provided a doorway to capture each participant's perspective. A semi-structured interview protocol using open-ended questions was utilized to allow the mentor teacher and mentee teacher provide lengthy responses to elicit comprehensive responses and opinions. A copy of the interview protocols for the mentors and for the mentee are available in Appendices C and D.

Criterion sampling was used to identify the participants. I utilized these sociograms and a summary of each participants' survey responses to determine which participants were actively involved and those who were not actively involved in their network (as indicated in the Findings section of this chapter). An actively involved participant was defined numerous relationships. A participant who was not actively involved was someone who had minimal connections in the network as portrayed by the sociograms. There were a total of nine participants who completed the surveys, four from School A and five from School B. Participants included seven novice teachers and two mentors. The school district assigns one mentor to each school site; therefore, SAM was the mentor assigned to School A, and SBM was the mentor assigned to School B.

Potential participants were invited to participate in the interview by email. I provided a copy of the interview protocol and the consent forms. The participants were asked to review and sign the consent forms prior to the start of the interview. Interviews were scheduled with each participant at a time and place convenient for the participant. The interviews were audio recorded. Each interview lasted 45 minutes to an hour. Follow up interviews were conducted, with nine participants, for clarification and deeper understanding purposes (Creswell, 2014). I also made notes of my observations as soon as possible following these interviews. Transcription of the interviews occurred as soon as possible after the interviews and member checking was done. Participants were provided copies of the transcripts for accuracy verification. Additionally, findings were substantiated by researcher field notes and photos taken during the site visits.

Observation Data

Observation was conducted at the school campuses and included "notes on the behavior of and activities of individuals at the research site" (Creswell, 2014). I observed meetings between mentors and their mentees "to better understand and capture the context within which [the participants] interact" (Patton, 2002, p. 262). My observation notes included "the setting that was observed, the activities that [take] place, the people…and the meaning that was observed from the perspectives of those observed" (Patton, 2002, p. 262).

With the building principals' prior knowledge of my planned visit to the respective site, I attended scheduled meetings between mentors and their mentees. These observations helped me become more familiar with the mentoring program within Allegiant school district, and established a trusting relationship between myself and the participants. I took detailed field notes during observations, and I also made notes post-observation. This "direct, personal contact with and observations of a setting" strengthened the study in that these observation notes were primary accounts of events within a natural setting (Patton, 2002, p. 262). As a present researcher, I received a "firsthand experience [of the] setting and the people and the opportunity "to see things that may routinely escape awareness among the people in the setting" (Patton, 2002, p. 262). Additionally, my direct observations revealed things which participants were unaware of or were unwilling to share during interviews (Patton, 2002, p. 263).

Documents/Artifacts

The inclusion of documents provided an unobtrusive way of accessing "the language and words of participants" (Creswell, 2014, p. 191). These documents "do not

intrude upon or alter the setting" in the way the researcher's presence does and are viewed as "a ready-made source of data easily accessible to the…researcher" (Merriam, 1998, p. 112). Documents provided "descriptive information, verify emerging hypotheses, advance new categories and hypotheses, offer historical understanding…track change and development…" (Merriam, 1998, p. 126). Patton (2002) viewed "records, documents, artifacts, and archives [as]…a particularly rich source of information" (p. 293).

In this study, documents such as training materials, program agenda, materials pertaining to evaluation of the program, meeting schedules and agendas, press releases, and information gleaned online were analyzed to shed light on the program and the context in which the participants interacted in the mentoring program. The mentors also provided me with copies of documentation they used and documents they shared with their mentees. These materials provided "behind-the-scenes look at program processes and how [it] came into being [at ASD]" (Patton, 2002, p. 294). One limitation in accessing this particular data source, as pointed out by Merriam (1998), is that documents created for non-research purposes "may be fragmentary…may not fit the conceptual framework of the research" (p. 126). In order to overcome this limitation, I made sure that the documents analyzed fit within the bounded phenomena of this study.

Audio-Visual Materials

In order to enhance my field notes and interview notes, I received permission to take photographs of the offices, hallways, classrooms, and campuses of each school site where the novice teachers worked. I also took photographs of the central office and building where the district mentors were based. The inclusion of photographs and other

information gleaned from social media, such as websites and press releases, provided a visual observation of the program and its participants. In particular, electronic data "offers…an extension of familiar research techniques, widening the scope of data available to the researcher" (Merriam, 1998, p. 128). While being a non-traditional method of data collection, it was an unobtrusive and creative way of collecting data and "[capturing] attention visually" (Creswell, 2014, p. 192).

Data Analysis

The iterative process of data analysis allows the researcher "to produce believable and trustworthy findings" (Merriam, 1998, p. 151). As stated earlier, data analysis began as soon as data collection commenced. Patton (2002) stated there are two primary sources of data. The first is "the questions that were generated…prior to fieldwork," and the second is "the analytic insights and interpretation that emerged during data collection" (p. 437).

Data analysis, as with the data collection process, was a two-phase process. The first phase included social network survey analysis through UCINET and NetDraw software which are useful tools to provide a visual representation of the relationships within networks. I then analyzed these relationships and developed scatterplot matrices from each of the participants' responses in the respective social network questions. The scatterplot matrices are presented in Appendix E, representing the emotional support received by participant, and in Appendix F, representing the professional support received by each participant. Strength of relationships was calculated by adding together responses from participant perceptions of importance of the relationship (response range was one to five on a five point Likert response set with "one" indicating "not important"

and five indicating “very important”) and participant perceptions of frequency of contact (response range was one to five on a five point Likert response set with “one” indicating “once in a while” and “five” indicating “daily”). These two responses were added together (with possible total ranging from two to ten). The total was then divided by two to determine a mean score, representing strength, for each relationship. The second phase included a content analysis of digital interview recordings, document review notes, and observation and field notes taken during observations.

Organization and Preparation of Data

This process included scanning of documents collected, inventory of artifacts and visual artifacts collected, transcribing interviews, and typing field notes so as to “get a sense of the whole” data collected (Patton, 2012, p. 440). I followed Creswell’s (2014) six step approach as well as Merriam’s (1998) levels of analysis to give me a general sense of the overall meaning of the data. Creswell’s (2014) steps included organizing and preparing the data, reading all the data, coding the data, presenting themes and categories, presenting my findings, and lastly, interpreting meaning from the data.

UCINET software was used to develop sociograms and printed according to each school site and each survey question. Each digital interview recording was transcribed. Interview notes and post-interview notes were scanned and combined with the respective transcribed interview. Documents and artifacts were also scanned and accompanying notes were combined with these documents. I organized my raw data in binders in chronological order according to school site and according to “the sources of information” (Creswell, 2014, p. 197).

Triangulation was conducted so as to get a better understanding of the information at hand. Patton (2002) described triangulation as, "using a variety of sources and resources, the evaluator observer can build on the strengths of each type of data collection while minimizing the weaknesses of any single approach" (p. 306). Throughout this process, I also recorded my thoughts and musings which will "be interwoven with [my] raw data" (Merriam, 1998, p. 165). I printed out all the scanned data, the transcribed interviews, and field notes and read all the data sources to familiarize myself with the data. As I re-read the data for a second time, I made notes about any important information, possible emerging themes, and emerging patterns.

Coded Data

After I had a general understanding of the data, I began to engage in reflective reading of the data sources and notes. As I was reading through the data sources, I began to code the data into categories. Categorizing was done several times to flesh out "more and better units of relevant information" (Merriam, 1998, p. 185). This systemic process was "informed by the study's purpose, the investigator's orientation and knowledge, and the [explicit meanings made by the participants]" (Merriam, 1998, p. 79).

For transcripts, I grouped notes and comments that I had made when working through the data (Merriam, 1998). For the other data sources, such as field notes and documents, I kept "a separate list of comments, terms, and notes…and then compare this list with the one derived from the first transcript" (Merriam, 1998, p. 181). These lists will then be merged into a master list that reflected "the purpose of my research" as guided by the research questions (Merriam, 1998, p. 183).

I then typed each unit of data onto an index card, listing the source of this data (such as interview or field notes), the site, the type of respondent, and the episode. The cards were sorted into groups and were constantly compared with information on other cards. Data analysis was an ongoing process; each pile was labelled, and each index card was coded and then grouped by the code on each card.

Generate Themes/Categories

The next process in data analysis was to "[draw] inferences, [develop] models, or [generate] theory" (Merriam, 1998, p. 187). I organized my index cards according to emerging themes, beginning with the common categories. The sources of my themes were three-fold. The first was be from "pre-determined codes that will fit the data," the second source were codes developed from "emerging information collected from participants," and the third source was a "combination of emerging and predetermined codes" (Creswell, 2014, p. 199). I then developed a code map that listed all the themes/categories developed; which constantly changed as I arranged and re-arranged my categories.

Convey Findings and Interpret Meanings

Because multiple sources of data were collected, findings were presented in a variety of ways. Social network findings were presented through sociograms, and findings from demographic data was presented in the form of descriptive statistics. Descriptive statistics will provide a better understanding of the research sample. I conveyed my qualitative findings through a narrative beginning with a "chronology of events, a detailed description of several themes" (Creswell, 2014, p. 200). This rich, thick description from my interview notes and field notes were accompanied with charts and

graphs. From the findings I used Social Network Theory as a lens to interpret the data to find meaning from the results of the study and answer the research questions.

Researcher Role

Researcher Background and Bias

Merriam (1998) stated that as "the primary instrument for gathering and analyzing data", the researcher "can respond to the situation by maximizing opportunities for collecting and producing meaningful confirmation" (p. 20). However, sometimes research bias inadvertently affected this process. As a product of both public and private education, I appreciate the extensive training novice teachers receive in preparation of their career. However, I am also critically aware of unintended consequences of ineffective or lack of professional development for both novice and veteran teachers. While I am not currently in the teaching field or K-12 education environment, I am constantly interacting with educators and administrators from local school districts. These interactions have revealed the limitations of professional development of teachers and the resulting frustration. Consequently, my interactions affected the study because I believe in the benefits of professional development, and I am constantly comparing my international educational background and the education system in the United States.

As such, I was careful not to let my perceptions and expectations influence how I reviewed and analyzed the data collected. I carefully analyzed the participants' comments from a more objective standpoint to ensure that I conveyed the realities of teacher professional development and mentorship from the field. I also followed university policy and adhered to qualitative research protocols. Finally, I was in constant contact with my

advisor to ensure the objectivity of the research was not compromised. The following will also be employed to address research bias.

Trustworthiness

Trustworthiness refers to the value, applicability, consistency, and neutrality of the study (Guba, 1981). The following steps were applied to ensure trustworthiness of the findings by minimizing interaction or influence by variables which could biasness or instability throughout the inquiry process (Guba, 1981). Creswell (2014) provided several strategies to ensure the research process is valid and reliable. A valid qualitative research requires "that the researcher checks for the accuracy of the findings by employing certain procedures" (Creswell, 2014, p. 201). Reliability is ensured through a consistent approach by the researcher throughout the process (Creswell, 2014).

Credibility

To maintain credibility, I applied techniques recommended by Creswell (2014). Prolonged and persistent engagement with the participants allowed me to develop trust with the participants to ensure accuracy and depth of data obtained. I was also able to gather in-depth data as well as gather in-depth understanding of the mentoring program. I used member checking to verify my documentation and conclusions by providing participants with copies of interview transcripts. Lincoln and Guba (1985) defined member checking as "a process of exposing oneself to a disinterested peer in a manner paralleling an analytical session and for the purpose of exploring aspects of the inquiry that might otherwise remain only implicit with the inquirer's mind" (p. 308). I also scheduled follow-up interviews/ meetings with a couple of participants to receive participant input and any important missing information. I also enhanced the accuracy of

my conclusions through continuous informal discussions with my peers and my dissertation advisor.

Triangulation was conducted through various data sources: interviewees' nuances of expressions and observations along with interviewer's observations, training materials, and observation data. I was able to "compare and cross-check the consistency of information derived at different times and by different means" (Patton, 2002, p. 559). This process allowed me to "build on the strengths of each type of data collection while minimizing the weaknesses of any single approach" (Patton, 2002, p. 306). I examined different sources of data, from interviews, training materials, observational data, and data from websites, to develop coherent themes to obtain a more complete understanding of the social networks and resources embedded in mentoring networks at each respective school. In doing so, I minimized any potential limitations of each data source and thereby enhance the validity of this case study.

Transferability

I used "thick, thick description" (Creswell, 2014, p. 202) in my findings so the readers have a visual experience of my shared experiences and of the setting. The data I gathered from interviews and documents provided a comprehensive picture of the mentoring program. My extensive field notes added further substance to this description. I also set about providing a thorough description of the research design, the settings, the participants, and results. This would allow the reader to best determine the study's replicability in the reader's setting.

Dependability and Confirmability

To maintain trustworthiness of my study, I developed and maintained an audit trail. I developed interview guides, and maintained peer debriefing notes and any form of communications between myself and the participants and the respective schools. All sources of data, including recorded interviews, field notes, observations, transcripts, and documents (physical and electronic) were available for audit. I kept copious notes of my thoughts and research process throughout this case study. This approach was necessary to ensure that this study could be replicated (dependability) and that another person's findings would be similar to mine (confirmability).

Reflexivity

Reflexivity relates to potential bias or distortion of research outcomes emanating from the researcher or the research participants and the unintended consequences of bias (Gay, Mills, & Airasian 2012). Reflexivity, therefore, is a guide for outlining and achieving ethical practices in research by addressing the potential distortions or preconceptions a researcher may include when designing the qualitative designs. Every researcher wishes to maintain accuracy throughout his/her research process. However, as this research involved interviews with research participants, the social interactions between interviewer and interviewee presented opportunities of assumptions or bias.

Table 1

Trustworthiness Criteria and Examples

Credibility		
Criteria/Technique	***Result***	***Examples***
Prolonged engagement	• Develop trust • Develop rapport • Build relationships • Obtain wide scope of data	Present in the field from February 2018 to May 2018; avenues of communication: quick drop-ins at school site, emails, appointments, and telephone calls
Persistent observation	• Obtain extensive data • Obtain accurate data	Observation of participants during mentor and mentee meetings; Observation of school culture during each site visit; Took photographs inside and outside school sites
Triangulation	• Verify data	Multiple sources of data: SNA survey, interviews, observations, documents, websites, interview notes, and observation notes
Peer debriefing	• An additional perspective and guidance from a trusted source	Continuous informal discussions with dissertation advisor on design, interview questions, observations
Member checking	• Verify documentation and conclusions	The participants received copies of interview transcripts to verify accuracy
Purposive sampling	• Site selection provided a good venue for examining the pattern of relationships in mentoring program	Purposeful in the selection of site based on the number of beginning teachers (criterion sampling method)
Transferability		
Criteria/Technique	***Result***	***Examples***
Referential adequacy	• Provide a comprehensive overview of the program	Gathered information from websites, received materials used in mentoring program
Thick description	• Provide a database for transferability of data	History of mentoring program observations regarding the school sites and participants
Dependability		
Criteria/Technique	***Result***	***Examples***
Access to an audit trail	• Allow auditor to determine trustworthiness of study	Interview protocol, Interviews notes, Field notes, documents, and note cards, are readily available for an audit

Ethical Considerations

Ethical considerations are an important issue for researchers. An ethical approach to research includes protecting the research participants, developing an element of trust, maintaining integrity throughout the research process, and "guard[ing] against any misconduct and impropriety" that might undermine my research (Creswell, 2014, p. 92), I also developed mechanisms to cope with unexpected, challenging issues (Creswell, 2014).

Data collection ethics. Several mechanisms were employed during the research process to avoid potential ethical dilemmas. I developed an informed consent form for the participants to sign and make sure they understood that their rights will be protected throughout the research process. Prior to commencing data collection, I sought approval from Oklahoma State University's Internal Review Board (IRB). I also sought permission from Allegiant School District's Research Department, and the respective school sites by submitting a separate IRB request to the school district and secured permission to conduct the study from the principals of the respective school campuses. During the data collection process, I ensured minimal disruption as possible at the school sites. I also discussed the purpose of my study and remain within the interview protocols. I ensured that participants were treated respectfully by scheduling interviews at a time and place of their preference and convenience. Lastly, I offered to share my transcripts, findings, and final document with participants as part of honest and neutral reporting. I maintained the integrity of the data collection process and avoid misleading conclusions.

Data analysis and interpretation ethics. I reassured participants that their responses were kept confidential and they were given a pseudonym to protect their

identity. The school district and school sites were also be given pseudonyms. The raw data and other materials were locked in my office, and I was the only one to have access to the raw data. Data was kept for a reasonable period of time once analyzed, typically five years (Creswell, 2014). I engaged in ongoing and clear communication with these stakeholders to ensure all their queries are answered in a prompt manner. As a full-time student, I am not employed by the school district, so there was not any conflict of interest in this research.

Summary

Chapter three provided a comprehensive description of the methodology I employed for data collection and analysis. It includes a discussion on the methods I employed and acknowledgment of the ethical considerations required in any research. I also addressed any limitations and potential researcher bias. I also extensively discussed procedures I adopted to ensure the trustworthiness of my findings and conclusions. I also provided specific examples of how I supported the validity and reliability of my findings.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The purpose of this study was to examine the pattern of mentoring relationships embedded in a centralized mentoring program, the New Teacher Center (NTC), at two schools in a large, urban district in the Midwest. The participants were teachers and mentors who were participating in the New Teacher Center mentoring program. The chapter is presented in three sections. The first provides an overview of the school district, both elementary schools, and the individuals who took part in the research. The following sections include presentation and analysis of the data. Data was collected in two phases. In the first phase, all the new teachers and their district-assigned mentors were invited to participate in a social network survey. The scores of each participant's responses are summarized in Table 2 (below). Next, for each SNA question, scatterplot matrices were created to provide a visual representation of each participants' responses by emotional support and by professional support (please refer to Appendix E and Appendix F). I then used the survey results to develop sociograms, which are visual representations of the relationships maintained by the participants. The sociograms and the qualitative survey responses provided further understanding of these networks.

The next phase of my research included interviews, observations, field notes, and documentation. I also conducted interviews with seven teachers, three from School A (SA) and four from School B (SB). I also conducted interviews with two mentors: the mentor assigned to each school. I conducted 10 observations of meetings between mentors and their mentees at both school sites. I also reviewed documents used in the mentoring program in Allegiant School District (ASD) that are provided to the teachers and their mentors.

I administered the social network survey to the participants at School A and School B. There were nine survey participants in total, four teachers and their district-based mentor from School A, and five teachers and their district-based mentor from School B. I then used the survey results to create sociograms, using UCINET and NetDraw, which are visual representations of the participants' network relationships. Moreno described the visualization process as a "method of exploration" (Moreno, 1953 as cited in Prell, 2015, p. 83).

A complete network, where participants would choose names listed in the SNA survey, would have allowed me to measure density, centrality, strength, and reciprocity of the relationships of the sociograms. Complete networks are where "…all actors in the networks are known beforehand and where the ties linking these actors are then measured" (Prell, 2015, p. 118). However, the surveys applied in this research were open network surveys, commonly referred to as "name generators" in social network research (Prell, 2015), whereby the participants could list any contact that "fit" within the description of the survey prompt. Instead of providing the participants with a roster, which was a list of names, the survey applied a name-generator questions where each

survey question "[generated] a list of names according to a particular social relation" (Prell, 2018, p. 119). Consequently, the participants' networks are not considered complete networks and according to Prell (2015), "…the network data is not complete network data" which makes calculations for density and centralization difficult (pp. 66-67).

In order to have a complete appreciation of the challenges and experiences of these new teachers and mentors, I have provided a description of the school district, of the two elementary schools, and each participant. Sharing the participants' stories is important in providing a vivid picture of the actual experiences of the participants and of the setting and culture at each school site. This chapter will begin with a description of the school district, followed by a description of each school site, School A and School B. These descriptions will be followed by a description of each participant, providing better understandings of the context for each participant. By providing these descriptions, readers to gain better insight into the networks of these individuals. Descriptions are provided of the participants at each school, providing more information on each individual, helping the reader to know their personas, their dispositions, and their experiences in general. The idea is to humanize the participants as they share their stories. Also included is a general description of the relationships each participant maintains, both at the school site and outside the school, and a comparative description of their social networks at each school site.

Overview of Allegiant School District

Allegiant School District is one of the largest school districts in a Midwestern state. The school district was chosen because of its collaboration with the New Teacher

Center on its mentoring program for the district's new teachers. According to the district's website, the district employs 7,000 employees of which 3,000 are educators. There 86 schools in the district, with 51 elementary schools, 12 middle and junior high schools, nine high schools, one alternative school, and eight charter/partner schools. The district serves approximately 36,000 students, of which 86% qualify for free and reduced lunch – an indication that the majority of its students live in low-income households. Twenty-two percent of the student population are English Language Learners, 19% are special education, and 12% are gifted students. Male students make up the majority of the population, at 51%, and females make up 49% of the population. Hispanic is the dominant ethnicity at 35% of students, and Africa-American and white students are the next dominant ethnicities at 24%. The remaining student demographic consists of 9.5% multi-racial, 5% are Native American, and 2.1% of students identify as Asian/Pacific islander.

As explained earlier, the district provides two forms of support and professional development to new teachers. The first is building-based whereby instructional coaches, who are appointed by the building principal, work with novice teachers. The second form of support is through the district whereby full-time, district-employed mentors are assigned to mentor new teachers at specific buildings throughout the district. While the typical caseload should approximately be between 10 to 13 teachers per mentor (Director of New Teacher Support, ASD, 2018), this is not the case in Allegiant School District (ASD). The mentor assigned to School A (SAM) served as mentor for 15 new teachers who were based at four schools for the 2017-2018 school year; all were emergency-

certified. The mentor assigned to School B (SBM) served as mentor for 15 new teachers based at seven schools; four were traditionally-trained and 11 were emergency certified.

One of the mentors, SBM, explained that the reason behind this significant caseload is because the district is continuously hiring (SBM Interview, 2018) new employees. She explained that most school districts typically do not hire during the school year; however, ASD is the second largest district in the state, and the high teacher turn-over has made ongoing hiring a necessity. According to the State's Department of Education (State Department Website, 2017), 1,160 emergency-certified teachers were hired by the state for the 2016-2017 school year, and an additional 1,851 emergency-certified teachers entered were brought on between July and December 2017.

School A and School B were chosen because they were similar in student population and student demography. Both schools also had similar number of new teachers participating in the New Teacher Center mentoring program (NTC). In her interview, the mentor assigned to School A (SAM) explained that new teachers would typically be provided with both instructional coaches and mentors for the first two years of their profession. However, due to the unprecedented number of emergency-certified teachers hired by the district over the past two years, the district decided, for the 2017-2018 school year, to assign all district-based mentors to only emergency-certified teachers who were first year teachers (SAM Interview, 2018). Instructional coaches were assigned teachers entering their second year including both traditionally-trained and emergency-certified teachers (SAM Interview, 2018).

Participant Selection

The participants in this study were purposefully selected. After receiving permission from the district's central office and the building principals, I forwarded an email to the selected teachers and their respective mentors inviting them to participate in my research. The mentors (one from each building) responded first and, through them, I coordinated a meeting with the new teachers from each building. During the first meeting with the teachers and their mentor, I explained the purpose of the study and the steps involved in the data collection process. The first step was a social network analysis survey distributed in paper form. At the meeting at School A (SA), the three teachers preferred to take the survey on their own time, and they mailed the completed surveys in self-addressed stamped envelopes that were provided. With the four participants from School B, all the teachers decided to take the survey while I was visiting the school after which the surveys were directly returned to me. Their mentor (SBM) mailed her survey to me directly.

The next step of my research included interviews and observations of meetings between mentors and their mentee teachers. The participants were purposefully selected based on the survey responses. The criteria used for selection of participants in the interview/observation portion included two mentees and their mentors from each building who were actively involved in the mentoring program and two teachers and their mentors from each building who were not as actively involved in the mentoring program. Their participation would be determined from their responses in the Likert scale questions (Appendices A and B) and the matrices developed using social network analysis software which provided a visual representation of the relationships of the participants'

relationship networks. An active participant would be defined by strong and numerous relationships; whereas, a participant who is not actively involved would have weak and minimal connections.

School A Location and Profile

The following information was gleaned from the 2016 School Information Page, the school's website, and data from the State's Department of Education. The school houses pre-kindergarten to sixth grade classes. There are approximately 470 students with more male students (55%) than female students (45%). For the 2017-2018 school year, 85% of students qualified for free and reduced lunch, indicating that 85% of the students come from low-income households. The majority of students are of Hispanic descent (55%), followed by Caucasian (16%) and African American (11%). The remaining student population identified as multiracial (8%), American Indian (7%), and Pacific Islander (1%). About 42% of the students are English Language Learners. While attendance rate was at 95% during the 2015-2016 school year, the school earned a D- in its report card issued by the state. This low score represents abysmally low student performance in the state's annual testing program. There are 33 teachers and staff, and the average general class size is 22, with four classes having 30 plus students. There are 24 teachers with a Bachelor's degree, eight with Master's, and two are National Board Certified.

The school is located on the east side of the school district, surrounded mainly by homes and businesses. Residential homes face the front of the school building across two roads (each road is a one-way road). A fenced-off activity field sits to the back of the school and is nudged on the other side by a large church building. The school is just off

of a major route with three entrances: one for the school buses, one for the teachers, and a third leading to the visitor's parking lot. The parking lot is located to the north side of the school and is easily accessible, even during the day, unless one is attempting to visit the school during pick-up times. Accessing the school property is quite easy; however, once I got closer to the building, it became clear that the school field and building are securely fenced off. Before and after school there are adult monitors around the parking area monitoring the traffic and "keeping an eye" on the students as they enter and leave the building. During those times there is also a significant personnel presence at the front doors of the school, carefully monitoring individuals accessing the building.

The building has very strict security policies in place. First, all visitors are "buzzed in" after advising the staff the purpose of the visit through an intercom with a security camera. Once inside, the visitor is then "buzzed in" again to access the front office. Once in the front office, visitors have to sign-in on a computer and wear an electronically printed badge. Visitors are required to wait in the front office and have to be met there by whomever they are meeting. During my numerous visits, I was met by the mentor and the novice teachers. Visitors could only access the main building through separate entrance from the main office. Towards the end of my visits at SA, I noticed that security had increased significantly. In addition to the above procedures, a staff member was required to swipe his/her employee badge in order to allow visitors to access the main building, and visitors could only exit the building by going through the main office again. I did not receive an explanation as to the increase in security. Even the mentor, SAM, noted that security is quite extensive compared to other schools she visits in the district.

The main glass doors are locked at all times, except during pick-up and drop-off times. The doors to the front office have a glass center as well, so the staff has instant sighting of any visitor. Most of the front office has glass windows, so teachers and students walking the hallway can see in and vice versa. There are two television monitors on the back wall with the news channel on. The front office and the building, even the furniture, look clean, tidy, and relatively new. There are chairs lining the walls facing the front desk for visitor seating. There are security cameras in every area I walked: front office and hallway. The school is adorned with posters filled with words of encouragement and with posters and figures of comic book heroes such as Spiderman, Wonder Woman, Ninja Turtles, Flash, The Hulk, and The Fantastic Four, to mention a few. Even the glass portion of the front office is lined with comic book figurines. The school's vision, mission, beliefs, and values are posted on the walls. They are written in both English and Spanish – a clear acknowledgement of the student demography.

The hallways are clean, well-lit, well-ventilated, and are lined with relatively new-looking lockers. The hallways, classroom doors, and the classrooms are adorned with words of affirmation and encouragement. There is a strong emphasis on looking forward, even towards attending college. The superhero theme is prominent throughout the building and sends a powerful message to the students: who is your hero? These words encourage students to aspire to be better and encourage them to focus on positive things – isn't that what superheroes do? As an outsider, I could tell that the principal tries to promote a safe and student-focused environment, encouraging her students to take pride in their school and their education. This was also supported by the school's mentor, SAM who stated that the principal takes strong ownership of her building making it a fun

environment for her students. The principal has managed to foster a supportive network, where everyone works as a team for the ultimate benefit of the students. Even teachers are held to the same level of expectation. Teacher SA1 stated, "Our principal is a really strong leader, she has high expectations, she expects everyone to pull their own weight, and do their best and work hard." The idea is to encourage the work ethic so that it trickles down to the students as well, and teachers are the conduit.

On my first visit to School A, I met with the district mentor and two teachers. It was a rainy and cloudy day. As I walked up to the building, I was distracted by the throngs of students running out of the building – I was essentially walking against the crowd. Most staff and teachers who passed by me were friendly and said "hello." However, I noted a hesitancy from the front office staff when I asked if I could take photographs as part of my artifacts collection. I eventually received approval from the principal after emailing her. While I was never able to meet with the principal in person, she was always responsive via email to any request I had and even in encouraging her novice teachers to participate in my research.

Participant Profiles

For the school year, 2017-2018, there were three teachers in School A participating in the NTC mentoring program, and all were assigned the same district mentor (SAM). All teachers were in their first year of teaching and were teaching different grade levels.

The first teacher, **Teacher SA1**, taught second grade at School A and has been there since August 2017. Prior to coming to School A, she taught fourth grade for a year and a half at another school district. Teacher SA1 is very friendly, bubbly, and passionate

about teaching and her students. Education was not her first career choice, she was interested in linguistics, but she was influenced to pursue education and become an advocate for students of low-income background. She actually chose to teach in a high needs school, such as SA, as she saw herself as having more impact as an educator, promoting an equitable education for all students.

She sees education as an equalizer where everyone should receive the same opportunity rather than determining future success according to the student's zip code. As a new teacher, she has had some challenging experiences very early in her career as a fourth-grade teacher, including breaking up a fight in her first teaching job in another school district. SA1 said that experience "was troubling… [it was] not what I expected, but it definitely woke me up to the fact that I really needed to focus on classroom management" (SA1 Interview, 2018). Despite that, SA1 indicated that her passion for her students never wavered, even when starting a new position at ASD. SA1 comes across as very determined. She indicated that she "will find any way and seek any advice and resource to help her become a better teacher for the ultimate benefit of her students" (SA1 Interview, 2018).

We first met at her school along with her mentor and another teacher, SA3, when I left the survey with them. I was struck by her sweet and kind personality – key traits when working with students of such a young age. I did not experience any resistance or hesitancy from her for participating in my research. She even added that she would do "whatever she could do to help" (SA1 Interview, 2018). She comes across as someone who could get along with everyone. For her interview, we met at a college campus which is not too far from her school. As I settled at a desk in the main lobby area, I looked

around and noticed it was somewhat empty and quiet and hoped it would remain that way for the interview. SA1 breezed through the double doors, looking fresh-faced and smiling. Despite meeting me after a long day at school, SA1 was very open, engaging, and responsive during the interview. She was very honest about the support she received at the school site and from her district-mentor. Her open personality made this an easier interview than I anticipated, even when the background noise would sometimes be distracting.

The second teacher, **Teacher SA2**, taught first grade and had a more reserved personality. She was soft-spoken, but she also gave the impression of being capable of maintaining control in her class – a quiet strength in her. This quality clearly came out in her interview; she certainly did not hold back in her thoughts and perceptions. It took some "back and forth" correspondence between myself and the mentor to convince SA2 to participate in my research. She currently maintains three jobs to make ends meet, and she was concerned about the time requirement for my research. After contemplating various degrees, she realized that teaching was what made her the happiest and decided to pursue a degree in teaching. It took her seven and a half years to complete her teaching degree, which reflects the quiet determination that I picked up during my interview.

I interviewed SA2 toward the end of my data collection process after much convincing from her mentor to agree to participate. I am grateful that she agreed to be interviewed. I pulled into the parking lot that morning, hoping that she remembered I had a meeting with her. I went through the seemingly unending security procedures and waited for her in the front office. The staff member from the front desk quickly phoned her class, so she was aware that I had arrived. I waited for approximately 15 minutes as

she was busy ending her class. I could see her guide her students through the hallway to their next session, so I waved and hoped that she saw me. She disappeared down the hallway, so I gathered my belongings, ready to be met by her. But I grew concerned when I do not see her after five minutes or so. My thoughts quickly turned to, "Did she really see me? Did she get caught up with something and completely forget about our meeting?" I grew restless, knowing each passing minute was one minute less that I had for the interview. We were meeting during her planning time, which is about an hour long. I managed to convince the staff to let me walk to SA2's class down the hallway, a few feet to the left of the front office. I arrived to her classroom, peered in, and was disappointed not to see anyone. I tried to avoid attracting attention as I idled by her door. There was a security camera in the hallway, which I was sure was recording my every move. I did not mind.

After a few minutes, SA2 appeared around the corner from the front office. Her hair was pulled back in a bun, and she purposefully walked towards me. She greeted me, explaining her delay in getting a textbook. We settled at a booth table at the opposite end of the classroom. She was very open and deliberate in her responses – which surprised me because I thought her reserved character would influence a reserved response. She explained that, after graduating in May 2017, she went straight into teaching. While her teaching experience has mostly been "…positive, there have been some frustrations" (SA2 Interview, 2018) especially in student behavior and the suggestions being imposed from the district. When it came to a particular troublesome student in her class, she could see a disconnect between the advice she was receiving from individuals "…who aren't even at the school every day…" (SA2 Interview, 2018). She explained that their advice

failed to achieve the desired result in that specific situation. She emphasized the fact that she believes that "the same solution does not always work in every situation" (SA2 Interview, 2018). I appreciated the challenging position she was in with that particular student especially when his behavior was affecting other students. She explained, "…the kids can't focus when bad behavior is going on; however, they also can't learn if I'm trying to take care of that behavior" (SA2 Interview, 2018). While a solution has been lacking in this situation, SA2 acknowledged the immense support she received from her team lead, her team, and other teachers.

She indicated that her focus was on ensuring her students are ready for the next grade, especially when the students came into her class with little academic preparation for third grade. Despite all these challenges, she remained committed to her students, just as she remains dedicated to her profession. After all, she is managing three jobs "just to make ends meet" so she can remain an educator (SA2 Interview, 2018).

The third teacher, **Teacher SA3**, responded to my request for an interview and was even flexible in where we could meet. We met at a Starbucks location in the school district. I appreciated meeting outside the school site. It had less restrictions, there was an increased air of comfortableness, and we were not restricted by the school's schedule. We met on a slightly chilly morning, surrounded by fancy restaurants and high-end shopping center. The air was still fresh and slightly chilly – perfect. I was excited to meet with her because I was touched by her demeanor when I first met her at the school site. For our interview, I was seated at a table outside because there was too much background noise inside, with people chatting and music playing. However, I soon realized that siting outside was probably not such a good idea. As the morning progressed, more people

settled into surrounding tables, conversations ensued, and an annoying clock would chime every quarter hour. It was annoying and distracting. However, the interview proved to be as fruitful as I anticipated. SA3 walked up to my table, smiling. She was very friendly, pleasant, and spoke with a soothing, calming voice. She was very engaging and maintained eye contact throughout the interview. I immediately felt at ease. As with the other teachers, she was very open; her answers were not forced. She tended to laugh when she was nervous about an answer that could be negative.

SA3 taught pre-kindergarten and smiled every time she talked about her students, whom she says "keep her on her toes all day" (SA3 Interview, 2018). Her passion is in early childhood which is what her education degree is in as well. She explained that the days are long, sometimes starting at 6:30 am and often lasting till 7:00 pm, but her students remain her primary focus, even down to purchasing sleep mats for her students out of her own pocket.

SA3 is the first point of contact her students have away from their parents and their homes, and they have to manage the emotions that come with that separation. She added, when school first started, "…their routine was off, and didn't know why they were at school, and it was kind of hard to register with them…" (SA3 Interview, 2018). What made the situation even worse was that she went through five teaching assistants (TAs) during her first year of teaching. The constant "revolving door" of TAs was the last thing she needed, and she admitted that "It was extremely hard. And if it's hard on me, I can only imagine it was very hard on them. You could physically see the challenges that they were having…" (SA3 Interview, 2018). Yet, she did not let their struggles deter her. She realized that she needed as much support as possible, and she initiated contacts from the

very first day, asking her co-teachers, “can I come to you if I need help? Cause I needed to know who I could go to…” (SA3 Interview, 2018).

The district-based mentor assigned to School A was **Mentor SAM**. My first point of contact with SAM was via email, seeking her approval to participate in my research. She responded immediately, and she was very cordial. SAM came across as friendly and willing to contact her mentees at School A. I first met SAM at the school site along with two of her mentees. As I mentioned earlier, the third teacher, SA3 had recused herself as she felt overwhelmed and did not have time to participate. Thankfully, she later changed her mind. The mentor met me at the front office, and we walked to SA1’s classroom, at which point SA3 joined us. I am sure they could sense my nervousness as I kept repeating myself when explaining my research and data collection process. Despite meeting at the end of a long day, they were attentive and friendly. SAM’s presence during this meeting was very telling, she came across as protective of her teachers, and I got the impression that she wanted to reassure her teachers of her support. Her protective and apparent “mothering persona” came across when explaining why SA2 recused herself. I noticed that she was always wearing her “mentor hat” because even as we settled down for the meeting, she was giving SA1 positive feedback of her observations from earlier that day. She then guided her conversation to SA2, a clear signal that every teacher at each building is given her utmost attention, about different opportunities the teacher could seek in funding for her class trips. It seemed pre-kindergarten classes did not qualify for funding for field trips.

SAM is soft-spoken and has a calm disposition which can sometimes break into an infectious smile or laughter. As a veteran teacher who has worked in the same district

for over six years, it became apparent that she has a wealth of experience and wisdom to impart with her teacher mentees. She began her career as a second-grade teacher at another school within the ASD, and after moving to fifth grade, she eventually became a team lead for fourth grade teachers. She spent nine years at that same school until she transitioned into an instructional coach, which she described as "…you're assigned to schools…you support anybody who needed support with anytime of curriculum base" (SAM Interview, 2018). SAM has been a district-based mentor for the last two years.

SAM's caseload for the 2017-2018 year was 15 teacher mentees, based at five schools, all of whom were in their first year of teaching and emergency-certified. These teachers have a bachelor's degree from a variety of fields, including kinesiology, physical therapy, and zoology. Despite the heavy caseload, she indicated that she tried to see her teachers at least once a week. Although she does admit that "...it is kind of hard because a lot of teachers have the same plan... which requires a lot of flexibility in scheduling meetings with them" (SAM Interview, 2018). She stated further, "… I want to be at one school, but I end up going to another school to check on another teacher and [need] to come back to the other school" (SAM Interview, 2018). She wholeheartedly believes that supporting new teachers is "key to providing a student-centered education" and claimed that "…students need to be educated by qualified educators. They just do" (SAM Interview, 2018).

Despite the long days and continuous travelling between schools, SAM always supported her teachers throughout the interviews. She indicated that she views her role as a mentor being a "support system" to new teachers, providing individualized feedback that would benefit that respective teacher in key areas including classroom management.

She also described her relationships as collaborative whereby "…teachers are blank slates, I believe they come with their own tools and their own strategies…" (SAM Interview, 2018). Rather than imposing her own ideas, she encourages more of a reflective form of mentoring, including asking prodding questions and guiding her teachers to adopt applications that will benefit them and their students. She explained, "I'm there to support them to be an effective teacher to, of course, always to meet the students' needs" (SAM Interview, 2018). She believes that every stakeholder has a key role to play, from the mentors, to the coaches, to the principals, and even parents and it is crucial to maintain an open and respectful relationship between and with them.

She is approachable and friendly to everyone she encountered, even when we were walking back to her office for her interview and when we met at the school site. Her interview took place at the central office building housing the mentors and instructional coaches – in fact all of them are housed in a large classroom. This common office space makes it very convenient to interact with other mentors and coaches. Another element she emphasized is that mentoring is "not a one-person job, it is also a collaborative effort" (SAM Interview, 2018). SAM indicated that she has cultivated quite a wide and strong network of support. And she also suggested that, when it comes to seeking advice on working with her mentees, she typically turns to her fellow mentors, curriculum specialists, instructional coaches, and the Director of New Teacher Support.

I was struck by how pro-active she was when it came to her teachers. She would bring her teachers candy to lift their spirits during the standardized state testing period and leaving little gifts and words of encouragement, such as "let's finish strong!" SAM has a calming presence, that I can describe as being open and yet always in control. I did

not perceive her steadfast persona as necessarily a negative attribute, but that of caring leader where her mentees feel safe and comfortable in her presence. Her interactions with mentees indicated that there is certainly mutual respect between her teachers and herself, as well as mutual trust in the feedback and advice she shares with them.

SAM believes that these mentees are more than just colleagues; she has a genuine approach to helping them in any way she can. For example, SA3 described how her mentor stayed with her for a whole class period to go over the new report card system (SA3 Interview, 2018). Her mentor did not hesitate to "go above and beyond her call of duty" because that was her way of being present for her teachers, letting them know that "she was there for them" (SA3 Interview, 2018). I was drawn to her mothering and caring personality; she put me right at ease even though it was one of my first interviews, and I was terrified. SAM was very open and upfront about the work that she does, her answers were not forced, and she maintained eye contact throughout the interview. She was very open to the questions asked, even when talking about challenges she experiences, and her responses indicated that she always sees the good side of her work. As I was leaving, she surprised me with a hug which indicated to me that she is a warm, receptive, and caring individual. Her interaction with me translates into how she carries on her relationships with her mentees.

School B Location and Profile

The following information was gleaned from the 2016 School Information Page (available in Fall 2017 on the district's website), the school's website, and data from the state's department of education. The school houses pre-kindergarten to sixth grade classes. In 2016, School B had an enrollment of 608 students, with the majority being

male (52%). Of that number, 88% students received free and reduced lunch for the 2017-2018 school year. Similar to School A, the majority of students are Hispanic (64%), followed by Caucasian (15%), and African-American (9%). The remainder of the student demography comprises of Multiracial (8%) and American Indian (3%).

Thirty-two teachers are supported by 12 teaching assistants and 11 support staff, and the average class size is 22 students. There are nine teachers with a Master's degree, 33 teachers have a Bachelor's degree, one teacher is nationally board certified, and 16 of those teachers have 11 or more years of experience. As with School A, approximately 42% of School B's students are English language learners while the school recorded a 95% attendance record for the 2015-2016 school year. The school earned an F grade in its report card for the 2015-2016 school year due to low academic performance.

The school, which is centrally-located in Allegiant School District, is surrounded by residential homes and is located on a main street. There are signs indicating what is well-known as a low-income neighborhood nearby. High incidence of poverty is evident especially in the physical state of most houses within the one-block radius around the school. The main roads are narrow and in dire need of repair. At the end of the school day, the roads are inundated with cars as parents descend onto the school to pick up their children. There is a parking lot to the side of the school, but it is locked and inaccessible during the day. I made a mistake of parking there one morning only to find the exit gates locked when it was time for me to leave that afternoon. Unlike the other school, parking is limited with no signs indicating where visitors could park. Upon subsequent visits, I parked on the street. The fenced off playing fields and playground are to the back of the

building. A paved path leads visitors from the parking lot to the building's main entrance. The path is painted with shoe/foot prints in bright and kid-friendly colors.

The school is made up of two brick buildings; the main building, with two floors, houses the classrooms and offices. The main doors facing the main road are locked. Every visitor is greeted through an intercom to the side of the main doors, which is also connected with a security camera. Upon entry into the building, to the left is a long hallway leading to classes. To the immediate right is the front office where visitors are required to sign in and print a badge. Here, the atmosphere is more relaxed and friendlier than at School A. I do not feel as intimidated. The front office staff are very friendly; on most of my visits, they allow me to wonder on my own if I am meeting a teacher in her office for an interview. Over the course of my data collection, I developed a friendly relationship with the front office staff, and soon, they recognized me, buzzing me in without asking the purpose of my visit.

Between observations of meetings between the mentor and her teachers, I had the opportunity to meet the assistant principal, who actually helped to coordinate my visit at the school. She was a friendly and bubbly person and even remembered my name the first time we met. She and the mentor have a history; they worked together in the past as instructional coaches. I also met the principal briefly, and she was equally friendly. I was permitted to wait in the meeting room, which was nestled between the principal's and assistant principal's offices. The meeting room is dominated by a large television screen and a large meeting table surrounded by comfortable chairs. On other occasions, I waited in the assistant principal's office with the mentor. There was definitely more freedom to visit with the mentee teachers compared with School A.

Getting the teachers to agree to participate was more challenging with School B and took several weeks of back-and-forth communication between myself, the mentor, and the assistant principal before I received a message very early one morning from the mentor asking if I was able to drive up that morning. I drove as fast as I could to the school in the hopes of meeting with all of the teachers for the first part of the research: the social network survey. Upon my arrival, the mentor rushed me in without even signing in, so I did not miss one of her teachers who was leaving that morning. After that teacher had taken her survey, I returned to the front office to sign in without any reprimand from the staff or administration. The administration was so helpful that the assistant principal and the mentor, SBM, would tag team each other and cover for the mentee teachers for 10 minutes or so while they took the social network survey. During this time, it was only the teacher and myself in the room; which I respected as I did not want the teacher to feel uncomfortable by anybody else's presence when answering the survey. Three teachers took the survey that day. Between meeting with the teachers, the mentor and the assistant principal queried about my research and showed a genuine interest in it. Both were very friendly, helpful, and answered any questions I had.

The main building seemed older than School A; the hallways were carpeted which gave off a darker ambience. However, what caught my eye and got me excited were the words of encouragement and quotes, even from Audrey Hepburn and Eleanor Roosevelt, that adorned the hallways and office. There were colorful posters encouraging caution when using social media; whereas, others focused on academic success. Words encouraging students to practice positive affirmation adorned the walls. These words included "kindness," "integrity," "courage," "loyalty," and "dedication." All were in

vibrant and kid-friendly colors. There is an elevator on the first floor and a colorful mural surrounds the it; part of the mural features artwork by students which, I believe, are self-portraits. The building certainly tries to encourage students to take ownership of their building by displaying the students' artwork with walls and other features painted in bright colors.

As I walked down the hallways, I was distracted by post-it notes on all the lockers. Each had a positive message written in a child's handwriting, including "work hard, stay humble," "rock the test," "you will do great," and "don't give up." Even the stairs leading to the second floor are adorned with, what I assume, were words of encouragement written in Spanish. As I walked up the stairs, I was greeted by a picturesque mountain scene, with snow-capped mountains, green pastures, and a large blue lake. I took a moment to wish my elementary school had been this colorful and vibrant. The staff meeting room also encapsulated the theme of support and encouragement through multiple photos and posters adorning most of the walls; words on these posters included "teamwork," "have fun," habits of success," "challenge," and "confidence." This room also appeared to serve as a break room as it had a refrigerator, microwave, and coffee machine.

Participant Profiles

For the 2017-2018 school year, there were four teachers at School B participating in the mentoring program; all four were assigned the same district-based mentor, SBM. Three of the teachers were based on the first floor, and one was on the second floor. All four were first-year teachers. The mentor from School B, SBM expressed that she cared for her teachers and wanted to be present when I met them for the first time. She kept

saying that her "teachers were really stressed" as the reason behind their hesitancy in participating in my research.

The first teacher, **Teacher SB1**, was actually the only teacher to respond to my emails, and I met with her separately after school for the survey part of my study. She teaches 6th grade social studies and science and is in her first-year of teaching at the school and in the district. During our first meeting, she was very friendly and open about her experiences at the school. We met in her classroom and moved the meeting to the teacher's lounge across the hall as there were after-school activities taking place in her classroom. At the start of the meeting, she was distracted as she was trying to find child care for her children because she had forgotten there were activities scheduled that night at the school.

As she sat to take the survey, I moved to the other side of the room to ensure she felt at ease taking it. She was concerned about whether anyone from the building or the school would have access to the survey responses. I responded that all data would be kept confidential and that only I would have access to the information. I made a mental note to repeat the same to other teachers at both schools. Her question also made me wonder whether confidentiality concerns were influencing the teachers' participation, even though I always emphasized that participant identity and data would be kept private and confidential.

My next visit to her was for the interview. I arrived about ten minutes before the scheduled meeting, waiting in the front office, and reviewed my interview questions. It was the end of the school day, and the hallways and offices were quiet. I preferred to schedule interviews after school because teachers were not as rushed during the day. I

was also able to avoid the mad rush of students and having to navigate the clogged roads. The hallway was empty, with an occasional student wondering about. There were voices further down the hallway as after-school activities were taking place. I walked up the stairs and peered into her classroom; I could see students mingling around, and it seemed that a class was in session. I waited a few minutes in the hope that she would come out or meet me in the hallway. Soon, the current group of students exited the room, and a different group of students entered. The students leaving were accompanied by a female adult, and I asked her to check if SB1 was inside. Soon after, SB1 rushed out apologizing that she had forgotten about our meeting. I was just glad she was still at the school!

As before, we settled in the teacher's lounge, but during this interview, we were interrupted numerous times by others entering the room to use the photocopier. Each interruption was very distracting, and I was concerned that she would not be as open in her responses because of other people being present. It soon appeared that I did not need to worry; she did not seem distracted at all by those entering and leaving the room. SB1 stated that she had interned at a different school and had a different mentor before moving to School B. It has not been an easy transition for SB1, especially since she was hired late, in September, and had missed all the professional development sessions for new teachers that were scheduled before the semester began. Additionally, she experienced an hour-long commute, each way, that added to the pressures and challenges she faces on a daily basis.

There were times she seemed to struggle with her answers as she reflected upon her experiences at the school so far – which seemed to be mostly negative. Nevertheless, she indicated that she has developed a relationship with several students from her class,

all female students, who chose to spend time with her in the classroom rather than attending after-school activities. Even her mentor commented that she connects well with students. However, when it came to enforcing classrooms instructions, she continues to encounter classroom management challenges with her students. Unruly behavior was noted during observations where students were seen walking in and out of the classroom on their own accord. SB1 is passionate about teaching and her students. However, she explained that this passion can sometimes be undermined by her frustrations resulting from the school culture, a lack of support from the administration, the absence of accountability for the students, and her struggles to maintain control over her students in class.

After the interview ended and I was packing up my bags, my mind raced to find some words of comfort for SBM, and all I could muster was "well I hope things work out." She surprised me with her reply, "it will work out" (SB1 Interview, 2018). Despite all the challenges she faced, she managed to maintain a positive outlook. She went on to explain, "[I'm] actually looking forward to not driving an hour each way… actually I'm thinking of putting in a transfer to a school where they have accountability…" (SB1 Interview, 2018).

The next teacher, **Teacher SB2**, teaches second grade; she graduated in December 2017 and has only been teaching since January. She was one of the first teachers I met at School B when she agreed to take the survey. It was a very rushed meeting as she was leaving for the day, and I had a very small window of time to explain my research to her. Despite being in a rush to leave, I expressed my appreciation for her effort to listen to me and take the survey. I thanked her as I retreated to the door, not

wanting to delay her even more. I felt she was somewhat abrupt but then remembered that she was in a rush to leave. She is petite and soft-spoken, and I did wonder how she managed to be heard in class. I later learned, when I shadowed her mentor during an observation session, that she can certainly carry her voice in class. It appeared to be easy to under-estimate her ability to lead a classroom because she comes across as timid and shy. During our first interaction when scheduling her interview, the conversation descended into awkward silence as she lingered a few seconds longer than I expected, and my mind scrambled to end the conversation on a comfortable level.

I suspected that there was friction between her and some of her colleagues when I witnessed a frigid exchange between her and another teacher in the front office. This happened when a colleague started to berate her in front of everyone. Apparently, she had sent a student to another teacher's office when that teacher was away proctoring exams. The colleague coldly suggested that "well if you don't hear from her, assume she's proctoring all day." I felt that conversation could have taken place in a more private setting, and the colleague could have been more tactful in her approach. I sensed that SB2 felt cornered as she defended her decision to send the student to the other teacher's office. I felt concern for her, but I also wondered what caused her colleague to respond in this manner. I got further insight from her mentor, SBM, who shared her perceptions and explained that the teachers on SB2's team do not get along with her. Her mentor explained that she has struggled with classroom management, and the really troublesome students have been removed from her classroom. Other teachers resent having to take over her troubled students.

SB2 is a first-year teacher, right out of college, who has been given a very difficult class. Even SB2 admitted that classroom management was her greatest challenge. On the other hand, her team has experienced frustration in having to take other students when their classes are already large enough. Starting a job halfway through the year, SB2 missed professional development sessions offered to new teachers before the semester began, and her mentor admitted that SB2 had not received the required level of mentoring she needed. However, SB2 has received real-time coaching whereby her mentor gives SB2 instant feedback while she is teaching a class. SB2's network of support is very small as she mostly relies on her team lead and the other teachers in her team for support in teaching and learning practices. While she only meets her mentor occasionally, she indicated that she appreciates the feedback. She explained, "It's been really helpful, like, I'm like, okay I agree with that and what can I do to make it better…" (SB2 Interview, 2018).

It appeared that her colleagues underestimated her resilience and persistence to enhance her leadership skills in the classroom, especially in managing her students. This was very clear during the final observation of the semester when the mentor expressed surprise and awe in how far SB2 has progressed. Her mentor, SBM, expressed that her classroom management skills were "a complete turnaround." She appeared to be in control of the situation; she came across as confident, and she was smiling.

Her success was reflected in her confident persona when we met in her classroom for her interview a couple of weeks before the end of the semester. She came across as more open, friendly, and confident. Her responses were not forced. She maintained eye contact, and she even showed me online resources she uses. I did not have to struggle to

get answers from her; I simply asked a few follow up questions to clarify her responses. SB2 is passionate about teaching. and she loves children. She explained that this passion is what led her to become a teacher. She stated, "I *love* kids in general, and I love teaching in general, I've worked with kids since I was 12, whether it was with babysitting or child care settings, or whatever job I had…" (SB2 Interview, 2018). Her passion has been ignited by her new position at the school, a representative of the teacher's union. This position has opened new relationships with other teachers, other than her team.

Because it was only a few weeks from the end of the semester, the conversation turned to SB2's future plans. Despite all those challenges, she wanted to remain at the school instead of putting in a transfer. She explained that she was hoping to remain in the same grade, especially because it meant she could still use her textbooks. She showed me her collection of books for her students. While some of them were donated, most of them were purchased with her own money. Toward the end of the interview, I really started to like her, especially after knowing just how much she struggled in the beginning and still stuck to her class until the semester ended. After the interview ended, I felt the need to continue conversing with her and lingered longer than I should have as she was preparing for her next class.

The next teacher in the mentoring program is, **Teacher SB3**, teaches first-grade and is emergency-certified. She has worked in the district for four years, but this year was her first time teaching general education. The previous three years she had taught special education. She explained that she decided to transition into the general education classroom from a para-professional position because she wanted to experience an actual

teacher's position. She seemed to like or embrace a challenge. Even while teaching full-time, she is also pursuing a Master's degree in urban education.

I first met her briefly when she took the social network survey while the mentor generously took over her class for a few minutes. She was very friendly and had clarifying questions about the survey. It was an uneventful first meeting. However, scheduling an interview proved to be more challenging because she would leave as soon as school ended. Once, I missed her by only a few minutes. I managed to secure a day and time when I shadowed the mentor on her final observation for the semester. SB3 is a very friendly and confident person. She has a bubbly personality and gets along well with her mentor who once commented that SB3 was one of her favorite teachers. The mentor also indicated that she "does not say that often" (SB3 Observation Notes, 2018).

SB3 seemed to have managed her transition better than the other teacher mentees in the building, but it has not been without its challenges. She explained, "this experience has not been a bad experience at all. It started a little rocky in the beginning…" (SB3 Interview, 2018). However, it seemed she took it all in stride, explaining that "I'm pretty self-sufficient, once I get it, then I don't really need too much, if something comes up where it's just YouTube…" (SB3 Interview, 2018).

The final teacher from School B participating in the research is **Teacher SB4**. She is an emergency-certified teacher and is teaching second grade. She started as a teaching assistant in August 2017. When a teacher left from an unplanned leave, she was asked to take over that class in February of 2018. She was actually surprised when the school asked her to take over the class. She stated, "I'm kind of, I didn't know that the teachers felt I could do this, and that's why they asked me to do it" (SB4 Interview, 2018). With

little teaching experience, she relied on her team lead, especially for help with the curriculum. She indicated that her network of support is very small, and it includes the assistant principal, mentor, and team lead. She expressed appreciation for her mentor and described her as follows: "The one that I had was, or still have, is excellent. She did give me a number of things to do when I felt I was going to be overwhelmed" (SB4 Interview, 2018).

SB4 is very intentional with her words and in her mannerisms. I made notes on her voice intonations. She has had a different trajectory compared to the other teacher mentees. She has a private sector background, working for a Fortune 500 company, and she decided to retire and become a teacher. She shared that working with children has always been "her calling." She explained, "so I've always said my purpose in life, I've always known what that is, so that's been children. I used to work in the church that I belong to with children…" (SB4 Interview, 2018). She shared with me that teaching was her Christian calling. and she has not had any regrets. She stated, "I absolutely love it. There has not been a day yet that I've come to work and not felt like I don't want to go to work because of something" (SB4 Interview, 2018). I really enjoyed talking with her. At times, I would begin talking because I thought she was done, and she would continue with her response. She had a very relaxed manner. However, she could command her students' attention with her voice; she had that kind of persona.

I first met the mentor, **Mentor SBM**, assigned to School B at the school itself. She facilitated meetings when the teachers met with me to take the survey while she substituted for them. She has been a mentor in the district for five years and is also a reading specialist. She had been a teacher for 21 years. Of those 21 years, she worked in

Allegiant school district for 13 years. She has a bachelor's degree in elementary education and a master's degree in early childhood education. She is currently pursuing doctoral studies in instructional leadership with a focus on early childhood education. Her explained that her desire to become a teacher was ignited by her fourth-grade teacher. She described, "I was a struggling student, and she just gave her all to me…I couldn't do math, and she just poured everything she could and I was able to graduate" (SBM Interview, 2018). That experience had such a profound effect on her that she knew that she wanted to become a teacher just like her fourth-grade teacher. She currently works with 15 teacher mentees; four are traditionally trained, and the remainder are emergency certified.

For her interview, we met at the district's central office which houses the mentors and instructional coaches. It is a brown non-descript building with quite a large parking lot to the front of the building. This building formerly housed a school, so its structure and access to the building felt similar to visiting a school – without having to be buzzed in. The entrance was large and bright, and visitors immediately face a front desk where they are required to sign in. To the right were meeting rooms and offices. To the left were more offices and a library at the end of the hallway. The library houses materials for mentors and instructional coaches as well as materials and other resources for the district teachers. It was a quiet and well-equipped library where mentors could also gather to work. Right before reaching the library, there was a staircase which led to other offices, meeting rooms, and the shared offices for the mentors and coaches.

SBM and I settled in one of the meeting rooms. It was quiet – perfect for an interview without any interruptions. The room was set up for conference and training

purposes, with several round tables and chairs. SBM is very perceptive and candid in her responses although there were moments where I detected a slight hesitancy concerning how candid she wanted to be with her answers. It appeared as if she was being protective. I questioned if she was possibly being protective of her teachers. She was energetic and, in her own words, "busy hustling!" She explained that her role includes being flexible, even when it means changing travel plans at the last minute. She indicated that she is constantly "on the move" between different schools and her workplace (SBM Interview, 2018).

SBM expressed support for the NTC program. She explained that developing relationships is at the core of NTC's program. SBM stated, "NTC is the only coaching model that we've used that values relationships… The relationship between the mentor and the mentee is the root to build that student's success, overall student success, and they give us the tools to get there" (SBM Interview, 2018). SBM believes that, without such relationships, she cannot accomplish the expected impact on her teachers. Working with teachers for the benefit of the students has and remains the ultimate goal of the NTC program. She even explained how mentors go through professional development as well as a means to promote student success. She admitted that it was challenging in the beginning because "I started off as...wanting to be a teacher to the teachers…" (SBM Interview, 2018). But she soon realized that teachers have their own personalities and perspectives on learning, and, for her, that meant taking a step back. She explained, "it's not your classroom, and you have to grow someone else… I had to create a teacher, but her own…self, to develop her as a teacher in her own right, not a mini [me]" (SBM Interview, 2018). Even as experienced teachers, mentors are also learners in this process,

having to keep an open mind when developing new partnerships and learning about their new mentees.

SBM explained that she has absolute belief in the NTC mentoring model because it provides tools to develop and maintain relationships with their teachers. As she explained, "…they give us the tools to encourage, to support us in these conversations. The tools also help us to help them analyze student work, so helping them with that lesson planning, looking at data…" (SBM Interview, 2018). More importantly, the tools have been updated and adapted to meet the evolving role of the teacher. Examples include working with emergency certified and alternatively certified teachers. SBM had a genuine interest in my research, and I appreciated her help in finding innovative ways to meet with her mentees such as subbing in their class while the teacher took the survey. She was very helpful and acted as a great conduit between myself and her teachers and the administrators.

Presentation of Data

The following section provides a presentation of results from the social network surveys administered to the new teachers from School A and School B and their district-assigned mentors. There were nine participants, seven teachers and two mentors. There were three teachers from School A who completed the survey. Teachers in School A were assigned the following identifiers: SA1, SA2, and SA3. Their district-based mentor was identified as SAM. Four teachers and their district-based mentor from School B took part in the survey. Teachers from School B were assigned the following identifiers: SB1, SB2, SB3, and SB4. Their district-based mentor was identified as SBM. The results of the social network analysis surveys are discussed below.

I hand-delivered the surveys directly to the participants at each school. I met with two teachers and their mentor at School A and provided them with the paper surveys. The meeting lasted about 15 minutes during which I explained the purpose of my research. All the participants present agreed to participate, and I left the network survey with them and asked them to return them to me, by mail. Several weeks later, I hand-delivered the survey to the third teacher, SA2, at School A. All the surveys from all three teachers from School A and their mentor were mailed back to me in stamped, self-addressed envelopes that were provided with the paper surveys.

I met with the teachers and their mentors from School B at their building. First, I met with one teacher, SB1, separately after school. This participant completed the survey as I waited in the same room, and she returned the survey directly to me. Two weeks later, I met with the other three teachers and their district-assigned mentor to hand-deliver the paper surveys. I was met at the front door by the mentor who informed me that all three teachers were currently in class. She explained that I could meet with them for a couple of minutes while she (the mentor) substituted for them. I met with SB2 in her classroom as she was packing up to leave for the day. SB2 quickly took the survey, returned it to me, and I joined the mentor in the Assistant Principal's office. After a quick meeting, the mentor left and SB3 and SB4 came in quick consecutive visits to take the social network surveys. Each teacher returned the completed survey directly to me. During those meetings, it was just the teacher participant and myself who were present. I left the mentor survey with the district-based mentor, SBM, who mailed it in the stamped, self-addressed envelope attached with the survey. In total, nine completed surveys were received from the participants.

It should be noted that a complete network, where participants would choose names listed in the SNA survey, would have allowed me to measure density, centrality, strength, and reciprocity of the relationships of the sociograms. Complete networks are where "…all actors in the networks are known beforehand and where the ties linking these actors are then measured" (Prell, 2015, p. 118). However, the surveys applied in this research were name generator surveys whereby the participants could list anyone who fit the descriptive prompt in response to the survey questions. This means that, instead of providing the participants with a roster or list of names, the survey applied name-generator questions where each survey question "[generated] a list of names according to a particular social relation" (Prell, 2018, p. 119). Consequently, the participants' networks are not considered complete networks and according to Prell (2015), "…the network data is not complete network data" which makes calculations for density and centralization difficult (pp. 66-67).

Prell (2015) explained that defining a network boundary and identifying every actor in that network can be challenging. As such, a name generator was the preferred approach over choosing from an existing list of names (alternatively called a roster) because it was impossible "to know beforehand all the actors in a given social network" (Prell, 2015, p. 118). This was especially important if the participants had ties beyond their respective school building or even the school district. For this research, the participants were asked to list individuals whom they went to for professional support and individuals whom they turned to for emotional support. According to Hlebec and Kogovšek (2011) the name generator approach tends to produce the most complete and rich data on a participant's social network (p. 192). From the researcher's perspective, it

also presented the opportunity to understand how the participants made use of those ties and how the participants were influenced by them.

Social Network Survey Data

Three novice teachers from School A and their district assigned mentor participated in the social network survey. Four novice teachers from School B and their district assigned mentor participated in the social network survey. The survey results are summarized in Table 2 (below). The table lists the novice teachers from each school. Participants SA1, SA2, and SA3 are novice teachers from School A. Participants SB1, SB2, SB3, and SB4 are novice teachers from School B. The individuals who were part of the NTC mentoring program are bolded and underlined. For example, SA1 listed eight (8) contacts in total, and one (1) of her contacts was part of the NTC program who was also her mentor. Each of the participants' contacts are identified by their relationship with the participant. The term "colleague" indicated another teacher from the teacher's building, "teacher asst" indicated a former or current teaching assistant, and "administrator" indicated a principal or assistant principal at the building. "Mentor" indicated that this contact was the assigned district-based mentor and "friend/family" indicated the informal contacts the ego maintained for emotional and professional support.

Table 2

Social Network Analysis Reponses and Mean Support by Participant

Participant	Relationship	Prof Sup Frequency	Prof Sup HELPFL	Mean Prof Sup (Rel. Strength)	Emo Sup Frequency	Emo Sup IMP	Mean Emotional Sup (Rel. Strength)
SA1	Colleague	4	6	5	5	6	5.5
	Colleague	5	6	5.5	6	6	6
	Colleague	6	6	6	6	6	6
	Mentor	**4**	**5**	**4.5**			
	Colleague	5	6	5.5	5	6	5.5
	Teacher Asst.	2	4	3			
	Friend				6	6	6
	Family/Close				6	5	5.5
SA2	**Mentor**	**2**	**3**	**2.5**	**2**	**3**	**2.5**
	Adm	4	6	5	4	5	4.5
	Colleague	6	6	6	6	6	6
	Colleague	6	5	5.5	6	5	5.5
	Colleague	**5**	**5**	**5**	**5**	**6**	**5.5**
	Colleague	4	5	4.5			
SA3	**Mentor**	**3**	**6**	**4.5**	**3**	**5**	**4**
	Colleague	6	6	6	6	6	6
	Colleague	5	6	5.5	4	6	5
	Colleague	4	5	4.5			
	Colleague				6	5	5.5
SB1	Colleague	4	5	4	5	5	5
	Adm	3	3	3			
	Mentor	**2**	**4**	**3**	**2**	**4**	**3**
	Teacher Asst.				5	5	5
SB2	**Mentor**	**3**	**6**	**4**			
	Colleague	6	6	3	6	6	6
	Teacher Asst.	0	0	0	5	6	5.5
	Colleague				6	6	6
SB3	**Mentor**	**3**	**6**	**4.5**			
SB4	**Mentor**	**5**	**6**	**5.5**	**1**	**6**	**3.5**
	Adm	4	6	5			
	Colleague				1	6	3.5

Table 2 lists the frequency and how helpful each professional relationship was to each participant (columns 3 and 4) and the frequency and importance of each relationship providing emotional support (columns 6 and 7) by participant. For example, SA1's first relationship for professional support was with a colleague with whom she rated her interaction on a scale of 4 and rated the importance of this relationship as a 6. SA1 also indicated that she turns to the same individual for emotional support on a frequent basis and found this relationship very important.

In order to determine the strength of each of the participants' relationships, I added the scores of each of the relationships the participants went to for professional support, and the mean score was used to determine the strength of the relationships. The same was also done for relationships the participants went to for emotional support. For example, SA1 perceived her mentoring relationship as very important, yet this relationship was limited to professional support as she did not list her mentor as one of her connections for emotional support. SB4, on the other hand, did turn to her mentor for emotional support, but that relationship was not as important as the professional support her mentor provided. The sociogram (Figure 2) and the survey data are discussed in more depth below.

The Schools as Social Network of Support for New Teachers

I entered raw data from survey responses into an Excel Spreadsheet. The asymmetric matrix represented the ties between the participants and their ties. An asymmetric matrix is where there are equal number of rows and columns. For example, the ego may have a connection with their alter, but this connection may not necessarily be reciprocated. A connection in the network was valued as "1" in the cell and no

connection was valued with “0” in the cell. The data was then uploaded through a social network analysis software, UCINET Version 6 (2002). NetDraw was then used to create sociograms which are visual representations of the participants’ connections (Figures 2 to 4). Moreno described the visualization process as a “method of exploration” (Moreno, 1953 as cited in Prell, 2015). Each participant was asked to answer two social network analysis (SNA) questions. In the first question, the novice teachers were asked to list names of individuals whom they go to for professional support. The second SNA question asked the participants to list individuals they turn to for emotional support. The survey results are displayed in the sociogram below (Figure 2).

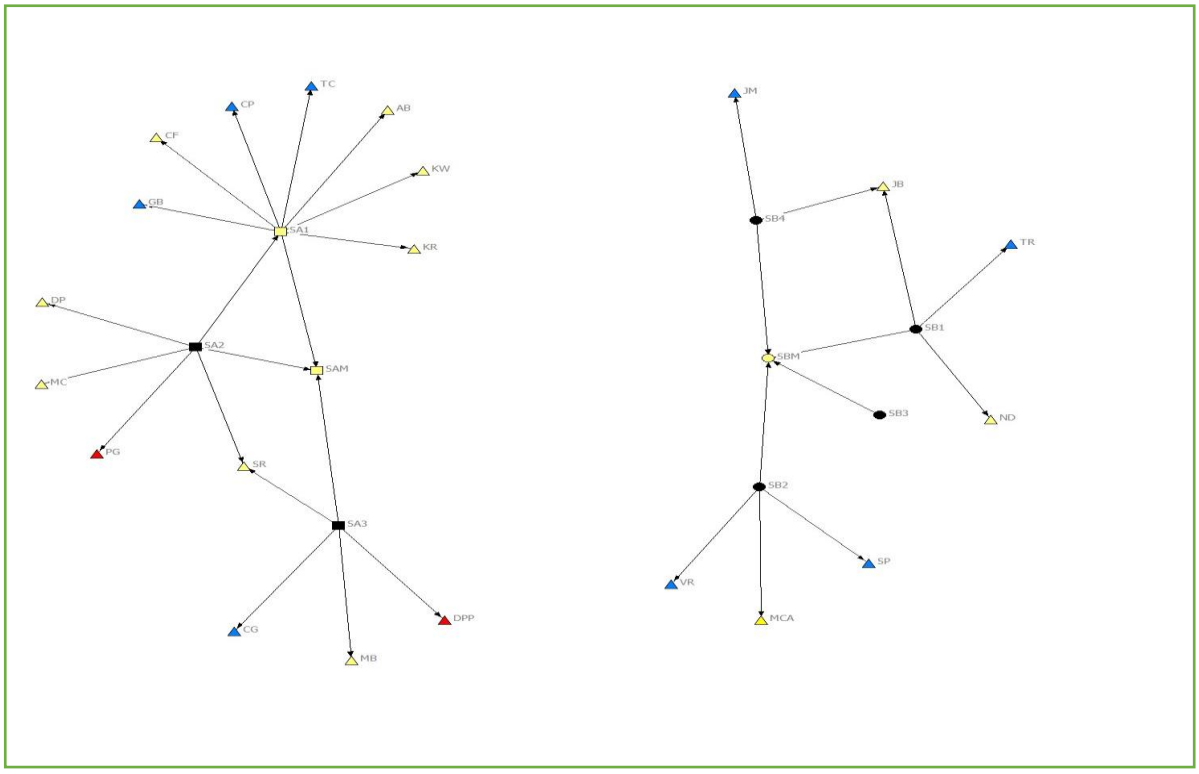

Figure 2. Sociogram: Professional and Emotional Support. Sociogram showing the relationships with individuals that teacher mentees went to for professional and emotional support. Red nodes indicate individuals providing novice teachers with only professional support. Blue nodes indicate individuals providing only emotional support to the novice teachers. Yellow nodes indicate individuals who provided both professional and emotional support. Black squares are the participants from School A, except SA1 and SAM who are indicated with a yellow node as they were indicated as a tie providing both professional and emotional support. Black circles represent the participants from School B, except SBM who is indicated as a yellow node as she was indicated as a tie providing both professional and emotional support.

The participants from School A had the greatest number of relationships (n = 8), with eight as the highest number of contacts and five as the least number of contacts. SA1 was only one of the two teachers with the most ties (n = 6). Most of her ties were colleagues based at the building which included her team lead, former teaching assistant, and other teachers. The size of her network (n = 8) indicates that she has numerous individuals from whom she can seek advice and help. SA2 also listed six ties which included her team lead, fellow teachers, and the principal. On the other hand, SA3 had a smaller network (n = 5) with four connections she goes to professional and emotional support. All of her connections are district based and included her mentor and other teachers.

Each participant at School A turned to her mentor for professional support in teaching and learning. However, as indicated in Table 2, the relationships between mentor and mentee were not perceived to be as strong as other relationships. For example, SA1's mentoring relationship ($\overline{x}$ = 4.5) and SA2's mentoring relationship ($\overline{x}$ = 2.5) had lower mean scores than their other relationships. In addition, SA1 found other connections with building colleagues to be more important as indicated by higher mean scores ranging from $\overline{x}$ = 5.5 to $\overline{x}$ = 6. The other two participants from School A also perceived their building-based connections as more important than their mentoring relationships in terms of professional support. Similarly, in terms of emotional support, the participants perceived their relationships with their colleagues as more important than their mentoring relationship. The only exception was SA1 who did not list her mentor as a source of emotional support.

The participants from School B, on the other hand, had smaller social networks, with teacher SB3 having the only one tie. Teachers SB1 and SB2 had the most connections with individuals whom she turned to for both professional and emotional support (n = 4). However, as with the participants from School A, the majority of participants from School B had stronger relationships with their building-based connections (from $\overline{x} = 4$ to $\overline{x} = 3$) than their mentoring relationships. SB1 and SB4 were the only participants who turned to their mentor for emotional support, and even then, they perceived other relationships within the same category as more important than the one with their mentor.

Teacher 1 at School B (SB1) listed three ties, and, based on the number of connections (n = 4), the frequency of her interactions, findings suggest that she maintained stronger professional relationships with her colleagues (from $\overline{x} = 4$ to $\overline{x} = 3$) than with her mentor ($\overline{x} = 3$). SB2 listed two ties whom she turned to for professional support for her teaching and learning practices and was the only teacher who maintained a stronger relationship with her mentor ($\overline{x} = 4$) than with her building-based tie ($\overline{x} = 3$). The same was also noted in SB3's professional relationship ($\overline{x} = 4.5$). SB4 maintained a strong connection with her mentor for professional support ($\overline{x} = 5.5$). With the exception of teacher SB3, all the teachers from School B listed their mentor as a source of emotional support. However, the teachers had higher mean scored with their building-based colleagues.

Next, the raw data from each social network survey question was uploaded int a statistical software, IBM SPSS Software (2018) to create scatterplots matrices. Two separate scatterplots were created for each participant, one indicating strength of

professional support networks and another indicating strength of emotional support networks. The scatterplots matrices provide a visual representation of the emotional support by participant (Appendix E) and of professional support by participant (Appendix F). In Appendix E, the Y-axis is the frequency of meetings between the participant and their respective connections as indicated by the participant on a Likert scale from one ('once in a while') to six ('daily'). The importance of each relationship is represented on the X-axis rated on a Likert scale from one ('not helpful') to 6 ('very helpful'). In Appendix F, the Y-axis represents the frequency of meetings between the participant and their relationships providing professional support on a Likert scale from one ('once in a while') to six ('daily'). The X-axis represents how helpful the participant found each relationship on a Likert scale from one ('not helpful') to 6 ('very helpful').

My assumption, at the inception of this study, was that a higher rating of a helpful relationship providing professional support receiving a higher rating of helpfulness or a relationship providing emotional support receiving a higher rating of importance would also be indicated by a higher frequency of contact. However, as the scatterplots of the participants' emotional supports in Appendix E and scatterplots of the participants' professional support in Appendix F indicate, this was not always the case for every participant.

In Appendix E, the emotional support scatterplot matrices for SA1 and SA2, revealed an increased perception of importance of relationship was also indicated by an increased number of interactions with individuals she met on a daily basis. The scatterplot matrices of SB1, SB2, and SB4 also revealed similar patterns for most of their relationships where an increased perception of importance of relationship was paired with

an increased number of interactions. On the other hand, not all of SA3's relationships providing emotional support followed my expected pattern who rated two of her relationships as very important even though she would meet with them occasionally (reported as 3 and 4 on the Y-axis). A similar pattern was also observed for SB4 who, even though met with her connection once in a while (1 on Y-axis) still found this relationship very important. The responses of SA3 and SB1 revealed that a strong relationship was not always determined by a higher number of meetings between them and their connections.

Appendix F represents the relationships participants had with individuals they turned to for professional support. The X-axis represents how helpful the participants found each relationship and the Y-axis represents the frequency of interaction. As indicated above, the general assumption is that a stronger relationship would also be paired with a higher number of meetings between the participant and their connection. This was certainly the case for SB4 whose most helpful relationships were reported by a higher frequency of interactions between the novice teachers and their respective ties. SB3, on the other hand, rated her relationship as very helpful even though she met with this particular connection on an occasional basis.

Other matrices indicated mixed responses between importance of relationships and frequency of meetings. SB2 rated two of her relationships as very helpful, even though there was inconsistency in the frequency of meetings with these respective individuals where she would meet with one on a more frequent basis than the other connection. While SA2's less helpful relationship paired with less frequency in meetings, her most helpful relationships were not always determined by a higher number of

meetings with these connections. She would meet with two of her connections on an occasional basis (reported as 4 on the Y-axis). Similarly, SA3 still found two of her relationships very helpful even though the frequency of meetings was lower (reported as 4 and 3 on Y-axis). The matrices for SB2, SA2, and SA3 indicate that infrequent interactions between the participant and the connection does not always result in a less helpful relationships.

The next section provides findings regarding each of the different networks: professional support and emotional support. For each section, the relationships with the novice teachers are presented as teacher to teacher relationships, other district-based relationships, and non-ASD relationships.

Professional Support in Teaching and Learning Practices

The survey participants were asked, *"whom do you turn to for support in your teaching and learning practices?"* Findings from their responses are represented in the sociogram, Figure 3, below. The respondents at School A are represented by squares, the respondents from School B are represented by circles, and their ties, or alters, are represented by triangles. The line between the nodes, or ties, represent a connection, or a relationship, between the nodes. The direction of the relationship is identified by a small arrow. For example, SB1 has three connections: ND (ASD connection), JB (ASD connection), and the district-based mentor (SBM) which means SB1 identified these three ties as a source of professional support in her teaching and learning practices. A tie with an arrow at both ends indicates that the relationship is reciprocated where each actor identified each other as a connection to whom they would turn. Other teachers are identified as team leads, teachers in their team, and other teachers at the participants'

school site. Other district-based connections represent administrators, mentors, and teaching assistants.

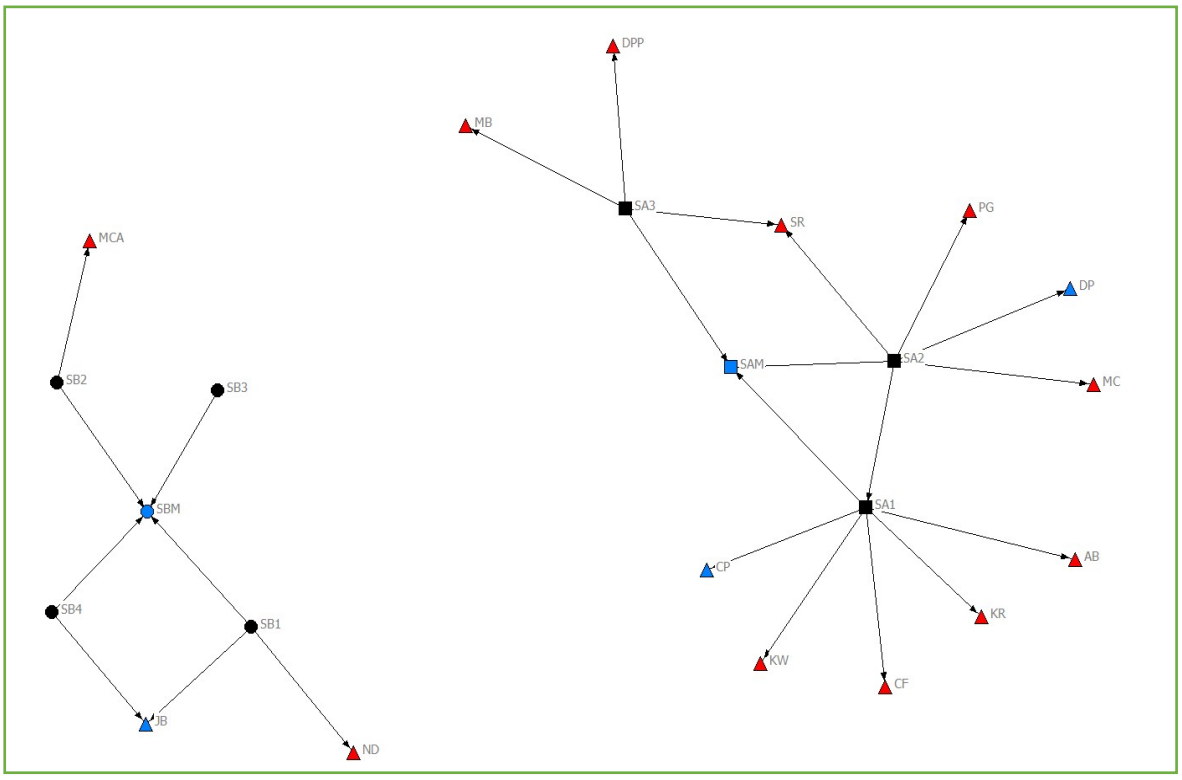

Figure 3. Sociogram: Professional Support in Teaching and Learning. Sociogram showing relationships with the individuals that teacher mentees went to for professional support in their teaching and learning practices. Red nodes represent other teachers. Blue nodes represent other district-based connections. Black circles represent the novice teachers from School B and black squares represent novice teachers from School A.

In this sociogram, the connections are limited to the respective school building, which means there was no overlap between School A and School B. Additionally, findings indicate the presence of only one-way ties. All the connections were employees of Allegiant School District. The number of connections at School A ranged from four to six connections. Teacher SA1 and SA2 had equal number of ties (n = 6), whereas SA3 had four connections. The novice teachers at School B had smaller social networks of contacts providing professional support. SB3 had the smallest network (n = 1), whereas other teachers' connections ranged between two to three ties. None of the participants

indicated that they maintained relationships outside of the school district for professional support.

Teacher to teacher relationships. Most of the relationships providing professional support to the novice teachers were with other teachers in their building. These ties included their team lead, other teachers in their team, and teachers from other grades. The participants from School A had a more extensive network of professional support from teachers than the participants from School B. Data analysis indicated the novice teachers would often turn go to their colleagues for questions or who have helped or supported the participants.

While there were no direct ties between the participants themselves, with the exception of SA2, the participants shared some similar connections. For example, both SA2 and SA3 indicated SR, a third-grade teacher, as a strong source of professional support ($\overline{x} = 5.5$ and $\overline{x} = 6$ respectively) as indicated by the relationship strength in Table 2. An interesting relationship was that SA2 also went to SA1 for support in her teaching and learning practices. Both participants are second grade teachers. While, this relationship was not reciprocated by SA1, teacher SA2 found this relationship to be very helpful, and this response was paired with a high number of interactions. Only two participants from School B went to their colleagues for professional support. While SB1 maintained a stronger relationship with ND ($\overline{x} = 4$) than the one SB2 had with MCA ($\overline{x} = 3$). SB3 did not have any relationship providing professional support with other employees, such as other teachers or her team lead in her building.

Other district-based relationships. These relationships are defined as ties the novice teacher had with other employees of the school district, including mentors,

principals, assistant principals, and teaching assistants. Teaching assistants (TA) provide additional help to the teachers in their classroom. There is typically one TA between all the teachers in the same school grade level. For example, all second-grade teachers had the same TA, and another TA was assigned to all third-grade teachers. Sometimes the same TA was assigned to more than one grade group of teachers as was the case at School B. SA1 was the only teacher receiving professional support from her TA; however, this relationship was weak ($\overline{x}$ = 3 per Table 2). Teachers SA2, SB1, and SB4 also sought professional support from their administrators. While SA2 and SB4 found this relationship very helpful ($\overline{x}$ = 5 per Table 2), the converse was noted for SB1 ($\overline{x}$ = 3).

All the participants listed their mentor as one of their district-based connections for professional support; however, these relationships were not as strong as the participants' connections with their colleagues (relationship strength ranging from $\overline{x}$ = 2.5 to $\overline{x}$ = 4.5 per Table 2). SB4 was the only novice teacher who found her mentoring relationship as strong ($\overline{x}$ = 5.5). Yet, with the exception of teachers SB1 and SA2, interview data indicated that the remainder of the participants highly valued their mentoring relationships. The remainder of the participants indicated how much they benefited from their mentor in terms of their teaching and class management skills. Interview findings indicated that they did not meet their mentors as often as their building colleagues which explains a lower relationship strength (from $\overline{x}$ = 2.5 to $\overline{x}$ = 4.5 per Table 2). Despite having the least number of connections, in the open-ended question part of the survey, SB3 added that her mentor has been "a great resource," and she indicated that the materials and instructions provided to her have enhanced her professional capacity as a teacher.

Emotional Support in Teaching and Learning Duties

Survey participants were also asked, "*whom do you turn to for emotional support regarding your teaching and learning?"* Their responses are visually represented in Figure 4 below. The respondents at School A are represented by squares, the respondents from School B are represented by circles, and their ties are represented by triangles. The line between the nodes, or ties, represent a connection, or a relationship, between the nodes. The direction of the relationship is identified by a small arrow. For example, SA2 has four ties: SR, MC, DP, and SA1.

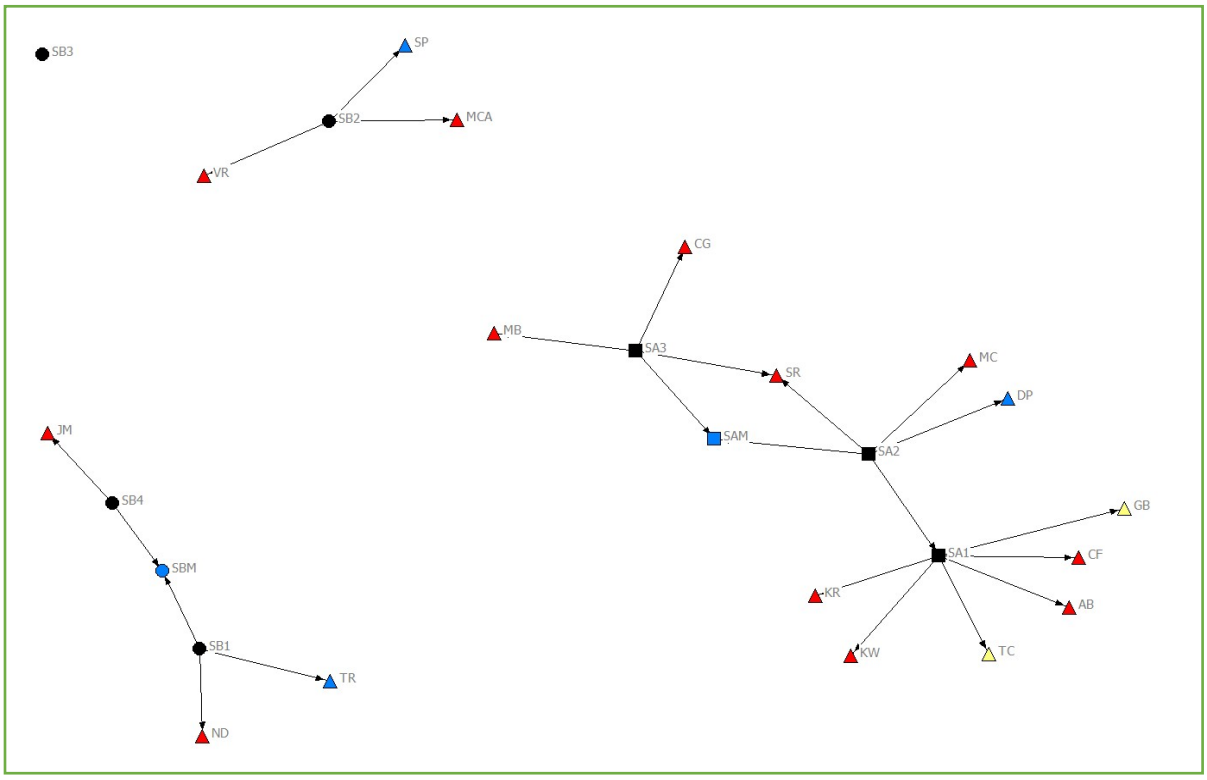

Figure 4. Sociogram: Emotional Support in Teaching and Learning Duties. Sociogram showing relationships with the individuals that teacher mentees went to for emotional support in their teaching and learning duties. Red nodes represent other teachers. Blue nodes indicate other district-based connections. Yellow nodes indicate non-ASD connections. Black squares represent the novice teachers from School A and black circles represent novice teachers from School B.

In Figure 4, the connections are also limited to the respective school building, which means there was no overlap of ties between School A and School B, and there were no two-way, bidirectional relationships. Most of the connections were with employees of Allegiant School District. Visually, the ties from School A were more cohesive as they listed more ties (n = 15) than the ties from School B (n = 8).

SA1 had the most number of ties (n = 6) which consisted mostly of colleagues. Findings also indicate that SA2 has a large emotional support network (n = 5). Most of her ties were building-based, aside from her mentor. SA3, on the other hand, has fewer connections (n = 4). SB1, with three connections, turned to her teaching assistant (TA), team lead, and her mentor as her main source of contact for emotional support. SB2 also listed three ties who were colleagues in her building. SB4 listed only two ties, whereas SB3 was the only participant without a connection for emotional support regarding her teaching and learning. Their limited number of connections and interactions rendered both SB3 (n = 0) and SB4 (n = 2) with the smallest emotional support networks .

Teacher to teacher relationships. As with their relationships providing professional support, most of the teachers sought emotional support from their colleagues, which included their lead teacher and teachers from their team. Most of these relationships were strong as indicated by the high frequency of interaction and the importance of the respective relationship. Teacher SA1 had the most ties with other colleagues at her school site (n = 4). Both SA2 and SA3 also turned to SR, another teacher, for emotional support with both participants indicating strong importance for this relationship ($\overline{x}$ = 5.5 and $\overline{x}$ = 6 respectively). The participants from School B tended to rely on their team lead and their teaching assistant, with teachers SB1 and SB2

maintaining stronger relationships (between $\overline{x}$ = 5 and $\overline{x}$ = 3 and between $\overline{x}$ = 6 and $\overline{x}$ = 5.5 respectively). Teacher SB4 had the weakest relationship with JM, a third-grade teacher.

Other district-based relationships. Only two teachers from School A, SA2 and SA3 turned to their mentor, SAM, for emotional support. The same was also noted at School B where teachers, SB1 and SB4, indicated that they perceive their mentor as a source of emotional support. However, as indicated in Table 2, that mentoring was not as strong as other ties in the participants' respective social network ($\overline{x}$ = 2.5 for SA2, $\overline{x}$ = 4 for SA3, $\overline{x}$ = 3 for SB1, and $\overline{x}$ = 3.5 for SB4). Yet, the presence of this relationship also indicated how the mentor's role transcended from just a professional development relationship to a more personal one. As data analysis confirmed, SA2 also turned to her administrator for emotional support, but this relationship was weaker than other ties with whom she sought emotional support from ($\overline{x}$ = 4.5). Other district-based relationships providing emotional support came from the participants' teaching assistants as was the case for SB1 and SB2 who indicated strong ties with their TAs ($\overline{x}$ = 5 and $\overline{x}$ = 5.5 respectively.

Non-ASD relationships. As Figure 4 shows, SA1 is also the only participant with non-ASD ties. These ties included her boyfriend and a female friend who teaches in another district. Her friend, also a K-12 teacher, has been a resource "to bounce ideas off of" (SA1 Interview, 2018). That connection has also provided emotional support to convince her to make necessary changes in her teaching. She explained, "…my friend, who's a teacher, just said just do it the way you want to do it… and I was kind of needed someone to tell me to do it the way I wanted to…" (SA1 Interview, 2018).

Content Analysis

Following the social network surveys, the participants were invited to participate in interviews. In addition, observations were conducted, and documentation was included as part of the data collection process. The following section will present an analysis of the data collected through interviews and supported by observations and artifacts. The interviews were analyzed and coded using Merriam's case study analysis (1998) methodology because it aligned with the purpose of this case study which was to provide a more focused approach to discovery through an "intensive, holistic description and analysis of a single instance, phenomenon, or social unit" (Merriam, 1998, p. 27). As discussed in Chapter III, this case study applied the constructionist epistemology. Constructionism "emphasizes the hold our culture has on us; it shapes the way in which we see things" (Crotty, 2003, p.58). In this research, reality is constructed by the lived experiences of mentors and mentees, how they interpret their experiences in the mentoring program, and how they make sense of it all (Crotty, 1998).

Per Merriam's (1998) approach, data analysis commenced as soon as data collection began. Merriam described this process as "making sense out of the data… [which involved] consolidating, reducing, and interpreting what people have said…" (1998, p. 178). A semi-structured interview protocol using open-ended questions was utilized to allow the participants to provide lengthy responses to elicit comprehensive responses and opinions. The novice teachers and their mentors were invited to participate in the interview either through email, text messages, or directly when I visited their building. During each interview visit, I made extensive field notes before and after each

interview. In total, nine interviews were conducted, which included seven novice teachers and two district-based mentors.

During this process, data was meticulously organized and prepared which included an inventory of artifacts and visual artifacts collected, transcribing interviews, and scanning field notes. The raw data was chronologically organized in binders according to school site and source. Triangulation was conducted to enhance the validity and reliability of the data through the following steps. First, data was collected through several data sources: interviews, observations, and documentation. Secondly, peer debriefing was undertaken through informal discussion with my dissertation advisor and peers. Lastly, I developed thick, rich descriptions of the school district, the school buildings, observations of meetings between mentors and the new teachers, and description of the sociograms.

As I analyzed the data, I began the coding process where units of data were typed onto index cards, listing the data source, the site, the type of respondent, and the episode. The cards were sorted into groups and constantly compared with other cards. Data analysis was on ongoing process, each pile was labelled, each index card was coded and then grouped by code. Next, the index cards were organized according to emerging themes. I created a code map listing all the categories developed which was constantly changing and re-arranged as the theme categories changed. The following themes emerged: *Communication, Building-level Support, District-level Support, Informal Support Outside School Setting, and Professional Development*. Each of these themes are presented below.

Communication

Interview findings indicated that the transition from a student teacher to a novice teacher can be a mixed experience because of excitement at starting a new job and having their own classroom. However, it can also be overwhelming and disorienting especially when the novice teacher has to learn and adapt to new procedures (SA1 Interview, 2018). As, SA3 explained, "[college] did a wonderful job of preparing me…but when you're in there… I was not prepared for this!" (SA3 Interview, 2018). While their college program provided the theoretical foundation of becoming an educator, it did not always prepare novice teachers for the practical realities they encountered in their career. SA3 shared how helpless and unprepared she felt when she first took over her classroom (SA3 Interview, 2018). SA1 shared similar challenges before she could settle into a rhythm with her students and her administrative duties (SA1 Interview, 2018).

Interview data also revealed that a teacher's responsibility extends beyond teaching and preparing their lessons because they were also responsible for various administrative activities for their students, such as getting their breakfast or filling out paperwork for their meals. SA1 had many questions when getting breakfast for her students, such as "where do we get breakfast? How long should it take? When do we need to be cleaned? How do we fill out the paper? How do you take the lunch count?..." (SA1 Interview, 2018). In most instances, these novice teachers were left to their own devices or had to seek out help (SA3 Interview, 2018). Most of the novice teachers from School A expressed the need for formal introductory sessions or a teacher's handbook explaining the building procedures and other relevant classroom responsibilities. SA1 added that more guidance would have been very helpful at the start of the semester, even

on the obvious issues such as where to proceed in the cafeteria with her students or even whom to contact for classroom supplies (SA1 Interview, 2018).

Evidence suggests that the absence of communication between the building and new teachers at School A was present even before the semester began. Prior to the start of the 2017-2018 school year, School A was under construction which meant all the materials and resources, needed to prepare classrooms and lesson plans, were packed away and inaccessible. Teacher SA1 mistakenly assumed she could only access them once the building opened after the renovation which was only two weeks before the semester began. However, faculty and administrators in her building failed to communicate to her that she could access materials online, leaving her with little time to prepare for the semester than she would otherwise have had (SA1 Interview, 2018).

While such information and procedures may be second-nature for returning teachers, "oftentimes it is easy for current teachers to take this knowledge for granted without realizing that they would need to explain and share this information with their new colleague" (SA1 Interview, 2013). There seemed to be a disconnect in communicating vital information that would have greatly benefited novice teachers in their preparation process. SA3 felt that "…they didn't teach me or someone didn't kind of guide me there" (SA3 Interview, 2018). SA3 added, "... there have been some times where I feel like I don't know anything" (SA3 Interview, 2018). Findings from this study suggest that a disconnect in communication left these new teachers disappointed and overwhelmed.

While the participants at each respective building were assigned the same mentor, there was a sense of disconnect between the participants. When I queried, SB1 was not

aware of other novice teachers who were participating in the NTC program. Even though the other three teachers from School B were in different grade levels, I was taken back by the disconnect between and within the NTC participants in the building. This was also something that SB4 touched upon in her interview when she shared that she had no idea about the scope of the mentoring program and what it could provide novice teachers. SA3 explained that she briefly met the other new teachers from her building during the initial professional development training provided by the district. Since then, "…no one's really gotten together…," and she indicated that she did wish they could meet up and share stories on "…what's been positive, what's been challenging" (SA3 Interview, 2018).

Clearly, there has not been any formal opportunity offered for the novice teachers to meet with others at their site or even others from the district. As SA3 explained, being able to share their experiences would have been a resource and support system for her because she learns better from other people's experiences (SA3 Interview, 2018).

Open channels of communication. While the school year started off with unexpected challenges for the novice teachers, the communication improved as the semester progressed. Novice teachers at School A felt that they had a good rapport within the building, especially with their principal. The participants shared how the principal prioritized open dialogue with her teachers, from discussions during team meetings to short, casual conversations in the hallway. SA2 shared how she enjoyed the open dialogue she had with the principal even if it meant a quick chat in the hallway or the principal conducted a quick observation in her classroom while she was teaching (SA2 Interview, 2018). The principal encouraged an open and inclusive community at her

building through regular electronic correspondence and being seen throughout the building.

There is open communication and an intentional effort to promote an inclusive work environment through regular emails and other forms of communication. The principal preferred an open-door policy for her teachers, and there were many occasions where she would be working from her laptop in the hallway (SA2 Interview, 2018). Teacher SA1 stated, “I know that my principal has my back, 100%, I know that she's behind me and that she will, if I ever need anything, she would be there for me” (SA1 Interview, 2018). Such ongoing interaction ensures teachers of their principal’s continued interest in their work and support for them. Similar sentiments were echoed by SB4, from School B, who described her principal’s support as “really good” and she “really likes” the principal (SB4 Interview, 2018).

With regards to mentor-mentee relationships, interview data also revealed that most of these relationships did not always begin on a positive note. During her mentor’s initial meetings, SA1 shared how uneasy she felt when her mentor began making recommendations on how to set up her classroom (SA1 Interview, 2018). She shared that she had her own ideas about how her classroom should be set up and felt her mentor did not fully understand her needs and expectations. SB2 even admitted that in the beginning she was defensive with her mentor’s feedback; however, she indicated that she was now at a point where she was open to the idea of receiving help and will be better prepared for the next school year. This finding indicated a period of adjustment between these two individuals who are trying to figure each other out. Only with time did these relationships develop into a mutual understanding and the novice teacher’s acceptance of their

mentor's input (SA3 Interview, 2018). As SAM explained, she recognized that teachers are their own individuals, who come with their own tools and strategies. Therefore, she perceived her role as more of a supportive one to encourage teachers to enhance their teaching skills within their own classrooms (SAM Interview, 2018).

Emails were typically the first point of contact between the mentors and the novice teacher. When each mentor participant was assigned a list of their mentees at the beginning of the school year, she sent out an email introducing herself and advising mentees when she would be dropping by. Subsequent meetings were usually scheduled by email as SAM used an online calendar to schedule meetings with her teachers. SA3 appreciated how effective her mentor was in responding to her emails, especially when she had questions in the beginning of the semester (SA3 Interview, 2018). Sometimes that approach did not always work where the novice teachers would not respond to emails or calendar invites. SAM explained that, in such cases, she resorted to quick drop-ins on her mentees to schedule meetings on the spot (SAM Interview, 2018).

Face-to-face meetings were the preferred communication format as the participants found it easier and quicker to explain their problems or ask questions, than through an email or phone call. All participants, with the exception of SB1, were pleased with the frequency and outcome of their mentor's visits. Most of the visits would take place every other week or every three weeks (SA1 Interview, 2018). The majority of new teachers expressed that they felt comfortable communicating with their mentors. This finding was supported by observations of meetings between the novice teachers and their mentors, where the teachers were very frank about their experiences during the semester. They were attentive, enthusiastic, and receptive by agreeing with their mentor's feedback.

SB1, on the other hand, explained that she did not see her mentor as often as she would like. Even as the semester wound down, SB1 shared that she had not even seen or heard from her mentor for several weeks (SB1 Interview, 2018). However, during observation of SB1's meeting with her mentor, her mentor recommended that it would probably be in SB1's interest if she requested to be placed at a school closer to home. During this conversation, the mentor acknowledged the long commute and the absence of discipline at the building were factors that SB1 struggled with. It was an interactive discussion, and SB1 came across as receptive and agreed to submit a request for a change of school for the next academic year.

The participants also spoke about the open communication they now have with their mentors. SB2 shared that she has developed a close bond with her mentor where she felt very comfortable talking about sensitive and confidential issues, adding that she would "trust her mentor with anything" (SB2 Interview, 2018). Two of the participants, SA2 and SB2, touched upon the advantages of having a district-based mentor because it meant the mentee felt free to speak her mind. They indicated that the mentor's feedback can be trusted, and it is unbiased (SB2 Interview, 2018). During observation of SB2's meeting with her mentor, the mentor provided valuable professional advice on the building principal which, as SB2 explained, helped SB2's final decision on whether she would stay at the same school or put in a transfer for the next school year. SA2 explained that having a district-based mentor facilitated the trusting aspect of the relationship, and she found it easy to reach out to her mentor whenever she had a problem or needed someone to talk to.

Building Level Support

For purposes of this research, building level support includes the relationships and support provided to the participants at building level, such as from other teachers and the administration. This section provides more information on the internal relationships and supports provided at the building level, or as I refer to it as internal support, which included administrative support, teachers supporting teachers, team lead, and team meetings. That support is a vital aspect in retaining new teachers, as SA1 stated, "teachers always encourage their students. They need encouraging too. They need that confidence building too" (SA1 Interview, 2018).

Team lead and team meetings. As mentioned earlier, the majority of the participants' relationships were with other teachers. As the sociograms in Figures 3 and 4 indicated, the majority of those connections were with their team lead and other teachers in their team. Interview data also confirmed that, for most of the participants, the team lead was typically the first person they would reach out to for support when they first started work. A team lead is typically a veteran teacher who is responsible for a group of teachers within a building or discipline area (SB4 Interview, 2018). The teachers are usually from the same class grade or same group of class grades. For example, all the fourth-grade teachers were in the same professional development group led by a veteran fourth-grade teacher as the team lead. It was the team lead's responsibility to oversee team meetings and act as a conduit between her group and other faculty and administration within the building by ensuring the team has access to pertinent information (SAM interview, 2018). As a team, the teachers met to plan lessons, discuss data, and other elements of professional development. These new teachers developed a

very close connection with their team lead (SB1 Interview Notes, 2018). This sentiment was shared across all participants at both schools.

Most often, the teachers from the same group had their classrooms located in the same hallway which allowed them to meet and interact on a daily basis. Being close in proximity allowed the novice teachers quick access for help or information from other teachers in their team. SB4 explained that she preferred to meet with her team lead in person, and if she just had a quick question, she would just stop by her lead's classroom which was located across the hallway. SB1 confirmed that she would also drop by her team lead's classroom for any quick questions she had. She had the utmost praise for her team lead's helpful approach and extensive knowledge.

SB3 added that her team lead has been very helpful, and she indicated that she can "count on her help for almost everything" (SB3 Interview, 2018). That support also included sharing school materials and resources. SA3 shared how her team lead took her "under her wing" and described that this relationship "has been very helpful" (SA3 Interview, 2018). SA3 went on to explain how her team lead would "walk through" her classroom activities with her. This was more of collaborative exercise rather than the team lead dictating to her what needed to be done and how it needed to be done. SA2 shared similar examples where her team lead shared online resources in addition to providing hard copies of resources the team would be using during their lesson planning sessions. Teacher SA2 added that her team even ordered additional resources for her class even before she was hired. She explained that these resources were of great help because having them meant SA2's students were not left out of a particular class activity (SA2 Interview, 2018).

As team lead, the veteran teacher also had the responsibility to bring the teachers she was responsible for together to work and to communicate as a team. The participants from both schools mentioned how helpful they found those weekly team meetings which was usually held once a week. These meetings would take place while the teachers' students were attending activities classes and would last approximately twenty minutes. SA2's team included both third and fourth grade teachers, and she shared how the fourth-grade teachers provided additional lessons for her third-grade students who tended to work at a faster pace than the other students. She explained these additional lessons would keep those students occupied while she "…was still trying to help the middle and lower level students" (SA2 Interview, 2018).

SB3 and SB2 explained that, during these meetings, they also planned their schedule and worked on their curriculum. As an emergency-certified teacher, SB2 used these meetings to connect more with SB4, another emergency certified teacher, for mutual support. SB4 transitioned from the private sector and explained how she used these team meetings as a learning opportunity. She preferred to listen than contribute to the conversation and "soak up as much information as possible" (SB4 Interview, 2018). She tended to do more note-taking than try to lead the conversation. Other meetings SB4 attended focused on student data, and the team lead used these meetings as a learning opportunity to provide new teachers feedback on their lesson plans, reiterate what is important, or to identify what areas needed to be improved on.

That level of support came into use when SB4 was given only four days' notice from the administration that she would be taking over a classroom from another teacher who was leaving. Upon receiving this news, she sought help from her team lead to

prepare for the transition from assisting other teachers to becoming a classroom teacher (SB4 Interview, 2018). SB4 appreciated how open and interactive her team meetings where teacher input was encouraged without fear of repercussions or judgement from the other team members. She explained that she did not feel any pressure to be correct all the time, a significant difference from her experiences working in the private sector (SB4 Interview, 2018).

Teachers helping teachers. Evidence suggests that the level of support the participants received also extended beyond the teachers in their team to include other teachers in their building. As indicated in Figures 3 and 4, the participants indicated ties with multiple teachers in their buildings. Interview findings also support these findings. SA1 stated that the building encourages a culture of support where new teachers are supported and there is a genuine desire for everyone to succeed. She added that, as a new teacher, she felt very supported, a feeling that is contrary to her previous experiences at a different school district which she described as "having toxic culture" (SA1 Interview, 2018). SA2, a third-grade teacher, stated that she also seeks advice from the second-grade teachers, who used to teach her students in the previous school year (SA2 Interview, 2018). When it came to preparing her classroom before the school year, SA2 also received useful information and advice, such as how to best position her students' desks.

The teachers helped her "figure out" her classroom and even helped her move desks around. Other teachers provided advice on seating arrangements because they had either previously taught her incoming class or taught siblings. SA2 also received support through school materials, which was very much appreciated considering the limited budgets teachers had to operate under. She had input from numerous teachers from

second, third, and even fourth grade. SA2 admitted that this support, as a whole, was a "great confidence booster" (SA2 Interview, 2018). SA2 described one of her colleagues as "…very calm, and very collected…" irrespective of the situation and explained that she was always willing to help her (SA2 Interview, 2018). With over 20 years of experience, the other two veteran teachers had experienced a variety of situations and provided a reassuring support system to SA2.

SA3 shared how the English Language Leaner teacher (ELL) teacher, who was located across the hall from her classroom, often acted as her "ad hoc TA" when SA3's teaching assistant suddenly left the job. Without extra help in SA3's classroom of pre-kindergarteners, the ELL teacher took her students to lunch, allowing SA3 time for her own lunch. The ELL teacher's bilingual background was also of great help especially when most her of students spoke only Spanish. She helped SA3 with translating teaching and communication materials, and SA3 explained how she would "…type something up, then [she would] re-read it in Spanish to make sure it [sounded]…grammatically correct" (SA3 Interview, 2018). She would even help SA3 "in the spur of the moment" in helping to translate for her students in class or she would call parents of students who had been misbehaving in class. She explained that the level of support she has experienced has helped her feel prepared, and the teachers at her building have been "hands on" in helping her to achieve her potential.

When asked about the support she had received from teachers other than her team, SB1 shared that she had developed a friendship with some other teachers where they would connect through their families. Interestingly, SB3 did not list any support relationships between herself and other individuals from her building in her social

network survey responses. However, when asked during her interview, she contradicted herself when she described her frequent interactions with her team lead and other teachers in her team. She also mentioned the principal being another source of support. She also commented on teachers coming together and helping each other. This was also confirmed by SB4 who commented that teachers are always open to answering each other's questions.

Teaching assistants. Figures 3 and 4 represented ties the participants maintained with other district employees which included teaching assistants. In their interviews, participants also confirmed receiving help from their teaching assistant (TA), who are building-based and are assigned to a team of teachers of the same grade level. The supportive culture was also reaffirmed by SA2 who stated that, as a new teacher, her team has allowed her to have more time with her TA, who would sometimes stay with her till the end of the school day. SA3 also had a similar experience as she explained, "...if [I] need help right then, I'll email someone, and they're very helpful" (SA3 Interview, 2018).

SB2 also confirmed that she has felt supported as a new teacher. For example, other teachers in her team allowed the TA to spend more time in her class. She shared that the TA usually comes to her class approximately two to three times a day unless the other teachers needed the TA more than she does. However, not every participant at School B had a similar experience. In SB1's experience, she had a mixed experience with her TA. She explained that while the TA was present on a daily basis, there were times she would see the TA for barely 20 minutes in a day. There seemed to be inconsistency in the support SB1 received from her TA. One possible reason behind this is because the TA

is also assigned to support to the fifth and sixth grade teachers, which meant very limited time in SB1's classroom.

Building administration. As indicated in Figures 3 and 4, the novice teachers also listed ties with their building leaders, principals and assistant principals. Analysis of interview data also indicated that building leaders at each school attempted to promote a culture of support for new teachers. However, interviews seemed to suggest that leader support was more successful at School A, with mixed success at School B. Two participants at School A, SA1 and SA2, talked about how their principal has made it "her mission" to cultivate a supportive environment for her teachers and students. This is certainly what I observed during my visits at the site, where the hallways and classrooms were decorated with posters and murals encouraging student success.

The principal was highly regarded by the participants at School A which characterized the positive relationships she maintained with her teachers. SA1 described the principal as a "strong leader who maintained mutually beneficial relationships with her teachers." She explained that the principal "…expects everyone to pull their own weight, …do their best and work hard…," and, in return, "she will always have her teachers' back" (SA1 Interview, 2018). SA1 stated that no matter what, her principal is always "there for her if [she] ever needed anything" (SA1 Interview, 2018). The same ethos was promoted during data meetings, when discussing student performance, where the principal took on an engaging approach. Rather than placing complete responsibility on the teachers for the students' performance, the principal encouraged a collaborative approach with data meetings through brainstorming sessions, and teachers were encouraged to make recommendations. These meetings promoted two-way dialogue and

encouraged teacher buy-in as opposed to having ideas imposed through a top-down approach. SA2 was also observed, during a meeting with her mentor, talking about her experiences with her principal who would conduct classroom observations. While these observations were nerve-racking at first, SA2 found her principal's feedback very helpful. Rather than being critical, the principal has provided useful tips and has helped her become more confident during subsequent observations.

On the other hand, the level of administrative support at School B was somewhat mixed. SB1 seemed exasperated and resigned to the lack of support she had experienced from administration. She explained that she had proposed after-school detention as a solution to the serious behavioral issues she was experiencing. However, her suggestion "was shot down" by the administration (SB1 Interview, 2018). She explained that she could not even impose detention on her students for fighting or cussing (SB1 Interview, 2018). According to SB1, the reason behind this decision was because leaders wanted to avoid showing racial bias by having physical data on detention rates. She could not understand the lack of support in implementing viable solutions to manage student misbehavior. Even though the mentor, SBM, maintained an open and friendly relationship with the principal and assistant principal; she confirmed that the school culture was one of the causes of the high turnover of teachers from the building (SBM SNA Survey, 2018).

On the other hand, SB2 explained that contrary to the initial interaction with her assistant principal; she eventually came to appreciate the importance of feedback in her professional development. She believed that her administrator's support could "only make her a better teacher moving forward" (SB2 Interview, 2018). Similar sentiments

were expressed by SB4 who described her relationship with the principal as excellent. She expressed respect for her building leader, even noting that she has "never heard one bad word about them from any teacher" (SB4 Interview, 2018). When the assistant principal conducted observations in her class, she was greatly appreciative of the feedback. She explained how the assistant principal "…did modelling for [her] and showed [her] how to teach a subject that she thought [she] was taking too long to do" (SB4 Interview, 2018).

District Level Support

There were approximately 12 full-time district-based mentors serving approximately 156 novice teachers for the 2017-2018 school year. Each mentor was typically assigned a caseload of 10 to 13 mentees. For the 2017-2018 school year, the district took a different approach in their assignment whereby all the mentors were only assigned first year and emergency certified teachers. The second-year teachers were assigned to district's instructional coaches. The reason behind this new approach related to the unprecedented number of emergency certified teachers being hired due to unprecedented teacher shortage in the district.

School A and School B were each assigned one district-based mentor, SAM and SBM respectively to lead the professional development (PD) of the novice teachers. SBM's survey responses explained the different coaching models they are required to apply in their mentoring relationships. These models are a combination of NTC tools and district-provided PD tools. Interview data also revealed other methods mentors applied, such as recommending online resources to their teachers. The various roles the mentors

provided to their teachers are discussed below in addition to the various PD tools they share with their teachers.

Various coaching models. The school district uses a combination of the NTC coaching model with two other coaching models recommended by the school district. The NTC model focuses mainly on helping teachers move forward in their instructional strategies (SBM Interview, 2018). The first are the New Teacher Center tools to help teachers improve their instructional strategies (SBM Survey, 2018). The second model is the "CT3 No-Nonsense Nurturing Coaching Model" which guides teachers on classroom discipline. Mentors also used a third model, "Get Better Faster Scope and Sequence" that helped mentors focus on top action steps for their mentees' professional development (SBM SNA Survey, 2018).

Mentors are expected to apply all of these models when working with their mentees. Observations are usually minimally-intrusive form of professional development application used by the mentors. Other times the feedback would be given in real-time, such as real-time coaching or whisper coaching. Real-time coaching is where the mentor is seated at the back of the classroom and gives instant feedback while the teacher is leading a lesson. The teacher would receive advice or instructions through an earpiece. Real-time coaching would be used when mentors feel the teacher needs a stronger management behavior program (SBM Interview, 2018). Whisper coaching, on the other hand, involves the mentor physically situated at the front of the classroom. As the mentee is teaching, the mentor whispers advice or instructions to the teacher during a lesson. There were mixed reactions from the new teacher about these particular feedback options. SB1 was the only teacher who had received real-time coaching with an ear piece

and found the experience stressful and not effective. In fact, this mentee indicated that it was more distracting then helpful (SB1 Interview, 2018). SA3 was the only new teacher who mentioned receiving whisper coaching and found her mentor's presence very reassuring (SA3 Interview, 2018). She appreciated having someone else in the classroom who could help identify problems and help her to immediately correct them (SA3 Interview, 2018). These differing experiences reveal how teachers are also individual learners who required different coaching models to meet their specific needs.

While SBM admitted that having to meet all the expectations set by each coaching model could sometimes be challenging, she explained that these resources were certainly an improvement from what was previously available to mentors. As she explained, "in the beginning when I just had…new teachers and their tools, I was limited, because I just had new teachers and *their* tools" (SBM Interview, 2018). In addition, previous tools did not include resources for emergency and alternatively certified teachers. As SBM explained, NTC tools are updated every year to keep up with the changing times in education (SBM Interview, 2018). As SA2 stated generalized feedback "might work for the majority of people, but it doesn't work for everyone" (SA2 Interview, 2018). She explained that, most often, the diagnosis occurs in real time during observations, and mentors have the flexibility of which tools to apply to a specific situation.

Interview data indicated an overall consensus between the participants on how these multi-dimensional mentoring tools have been really a significant resource in their professional development. The application of three different coaching models provided mentors with different resources in meeting their teachers' individual needs. As SB3

explained there has never been an occasion that her mentor "hasn't been able to accommodate [her] needs" (SB3 Interview, 2018). Another teacher also commented how the different tools and techniques shared by her mentor had really helped her become more effective in the classroom (SB3 Interview, 2018). Similar sentiment was echoed by SA3 during a meeting with her mentor and that even though it may take time to get used to the new tools, she was always open to them (SA3 Observation Meeting Notes, 2018).

Professional development resources. Evidence suggests that mentors also shared other tools and online resources with their mentees. SB2 explained that her mentor sent links of professional development videos that gave her ideas on areas that she needed to work on, such as giving precise directions to her students. Her mentor also signed her up for the teacher channel, an online resource which allows the mentor to share videos with her teacher (SB2 Interview, 2018). Rather than watching random videos, the mentor can send videos to help the respective teacher with specific areas where improvement is needed. This resource acts as a visual representation of the mentor's feedback, and mentees can watch at their own pace (SB2 Interview, 2018). Another teacher mentioned that her mentor provided her with tools, other resources, and literature that bridge gaps that enhanced her skills (SA1 Interview, 2018). Those gaps are identified from observations conducted by the mentor who made notes on "their teaching, their effectiveness, their classroom management" (SAM Interview, 2018).

Another resource the mentors applied was the Professional Growth Reflection Form which the novice teacher would complete at the end of the spring semester. This form walked the teacher through their successes, significant decisions and actions they made during the year, progress they have had with a specific student, and what are their

next steps (New Teacher Folder, Artifact, 2018). When going through each section, the mentor would guide and confer with the teacher and ask questions such as "…let's look at your year so far. Can we identify some successes that are happening?" (SAM Interview, 2018). The idea was to assist the teacher identify positive experiences and encourage them to acknowledge and take ownership of their progress (SA1 Observation Meeting Notes, 2018). It is about taking the positives no matter what happened (SAM Interview, 2018) which involved "releasing the heavy lifting…reflecting on teaching practices…" (SAM Interview, 2018). It also prepared teachers to close the year with their students and prepare them for next year (SA2 Observation Meeting Notes, 2018).

Observation data revealed that most of the participants noted an improvement, especially in their classroom management skills. SA2 commented that she "[had] become more organized…learnt to differentiate better among [her] students to provide more of what each one needs" (SA2 Interview, 2018). Similar sentiments were echoed by teachers from School B. For example, SB3 explained that the professional development she's received has been really great, particularly when learning new terminologies and different techniques to use in her classroom (SB3 Interview, 2018). SA2 added that the process has helped her "to improve a little bit at a time" (SA2 Interview, 2018).

Mentors as practical advisors. The main form of support the novice teachers received were observations conducted by their mentors and their respective feedback. During this time while teachers were teaching, mentors would spend several minutes observing their classrooms, taking notes, and then giving their feedback. The mentor assigned to School A, SAM, explained that most of her feedback focused on specific areas where the participant needed the most support. SB3 explained that observations and

feedback focused on classroom management and the inconsistency in delivering her lessons. Therefore, her mentor, SBM, shared some coaching tools and showed her how to implement them. SB3 concluded that these were very helpful and immediately knew what to do after her mentor's feedback.

Mentor participants were available to help their mentees. During observations, mentor feedback covered an array of issues, such as giving more responsibility to a troubled student in SB4's classroom as an engagement tactic to minimize the student's unruly behavior. While SB4 was apprehensive about her mentor's suggestion, she was reflective as she considered the type of leadership role she could give that student. During another observation at School A, SA2 received practical advice from SAM when dealing with special education students. This advice involved information and processes teachers this teacher needed. During the same observation, the mentor kept reassuring the teacher to focus on herself and her class. The mentor advised not to "…worry about other teachers' pace. Focus on your objectives. Teachers teach differently, and students learn differently" (SA2 Observation Meeting Notes, 2018).

Teachers expressed that this practical suggestion was exactly what they needed because they tended to be "their own worst critics" and they assumed responsibility when their students' academic performance did not meet their expectations. In these situations, mentees explained that the mentor became a valuable asset in providing simple, sensible, and practical advice to the participants. As SA1 stated, most of the feedback she had received was related to whatever issue she was experiencing in her class, and not much on theory. SA3 agreed that her mentor's input has been "on point" and interactions with her mentor have been "an eye opener" because she provided a different perspective to the

situation. She explained that "…sometimes you get closed off, and you need someone to…come in and say no, you can do this way too! So, it was nice…." (SA3 Interview, 2018).

Some participants also mentioned that the mentor's input would not be forced upon them; rather, they would ask questions and make suggestions. One participant stated, "…absolutely she helped me…have you tried this? Have you tried that? Have you read this article?" (SA3 Interview, 2018). SA3 added that her mentor provided suggestions on materials she could use for her lessons. These participants felt that it is important for mentors to keep in mind that, when they enter a classroom, it is another teacher's classroom and another teacher's domain. These findings suggest that mentors must engage in conversation to reflect this understanding. There were times when feedback was not always well-received, especially early in the relationship where both mentor and participant were still trying "to figure each other out." Teacher SB2 admitted that she "initially took her mentor's feedback hard," but then she realized that being her first year in teaching, there was room for improvement (SB2 Interview, 2018). Mentors always emphasized the message that change comes with time, as with any profession, and the participants had to be mindful of the progress they had made, however minimal it may seem. Mentors were observed encouraging their novice teachers to focus on their growth rather than their pain through the growth process (SB1 Observation Meeting Notes, 2018).

Individualized feedback and support. As reflected in their support and feedback, mentors focused on the teacher as an individual. Findings suggest that mentors understood that, while one tool may work for one participant, it did not necessarily mean

it would work for another teacher. Observations provided mentors with valuable insight into how they could best help each of their mentees. Mentors took cues from a standard observation form and made notes during each observation. Once observations were completed, the mentors would meet with the new teacher to discuss areas of strength and areas where the teacher needed help. Feedback covered a variety of areas, from directions on strengthening the teacher's classroom management (SBM Interview, 2018) to recommendations on managing small groups in the classroom (SA1 Interview, 2018).

Teacher SA1 agreed that her mentor, SAM, has been helpful in providing practical feedback, such as "…being more precise [with her students], holding all [students] to the same level [of expectation], no matter what, being consistent…stern, [and having] more structure" (SA1 Interview, 2018). At times, these feedback sessions resulted in conflicting perspectives, leading to disagreements between the teacher and mentor. When conflicting perspectives occurred, the participant indicated reluctance to trust in the mentor's feedback in the future. SB1 explained that her mentor's feedback was hard to accept because she felt her mentor did not know the students whereas she "…[had] a better grasp on what's going on than someone who just comes in, who observes for a little bit…" (SB1 Interview, 2018).

Despite these setbacks, observations of meetings between the mentor and her mentee underlined the effectiveness of individualized feedback for the respective teacher. SA3 added that her mentor was "very good" at giving positive criticism and found the experience as an opportunity to engage in critical feedback, rather than receiving the advice as being a punitive experience (SA3 Interview, 2018). Observations and feedback are time-consuming for teachers whose schedules are already over-extended. However,

observations of meetings between the mentor and teacher suggested just how invaluable individualized feedback can be. Observation data revealed how the mentor would complement the novice teacher on areas where proper procedures, such as classroom procedures, were correctly followed (SB1 Observation Meeting Notes, 2018).

Within the same vein, the mentors also acknowledged that every teacher learned at a different pace, and these mentors were conscious in the level of feedback and expectations they shared with the new teachers. As such, they made sure their feedback did not overwhelm the teacher and provided the materials in manageable doses. SA3 found this technique helpful, and she was grateful that the feedback process was not overwhelming. The same was observed during meetings where mentors focused on only a specific element the teacher could improve upon rather than overwhelming the novice teacher with multiple areas of advice.

An additional level of support. With regards to the social connections the participants maintained at their respective buildings, the district-based mentors provided an external form of support to the novice teachers. SAM described her job as being "supportive" and being "the extra set of eyes" for the participants (SAM Interview, 2018). The participants viewed their mentors as an extension of the support they received at their building. While welcomed by the novice teachers, the mentors needed to maintain a delicate balance between meeting their mentees' needs while ensuring they did not overstep or contradict the support and professional development the novice teachers received at their building.

Findings suggest that the district has effectively managed this collaboration by having mentors in a supportive rather than an evaluative role. The mentors, SAM and

SBM, were passionate about their crucial role they played in the district and remained dedicated in supporting their teachers. SAM stated that she saw her role as providing a different mindset and a different set of lenses to her teachers in their teaching practices (SAM Interview, 2018). That supportive role was certainly a common theme between the participants at both schools when describing their perspectives on what mentoring entailed.

Relationships were not always positive. Findings from this study also revealed moments when mentoring relationships were fraught with challenges. For example, not all relationships began on a positive note. Teacher SB1 was a late transfer to School B which left little time for the mentor and mentee to develop a relationship. Additionally, SB1 had been very close to her previous mentor, so switching schools during the semester added to the pressure of initiating a new relationship with another mentor. SB1 also touched upon the absence of a relationship she had with SBM and indicated that she did not spend as much time with her mentor as she would prefer. There seemed to be a disconnect in communication between both parties as SB1 added that she had no idea when she would be meeting with her mentor next or how often she was expected to meet with her mentor.

SB1 was the only participant who stated that interaction with her mentor has not really helped her professional development. She added that she could not pinpoint the exact reason behind her experience, alluding, at one point, that it could be the heavy caseload which did not allow her mentor to spend time with her. However, she added that she has received feedback from her mentor's observations, and, while she had a negative experience from the real-time coaching, she also admitted that she was also at fault for

not putting the time and effort to follow up on her mentor's feedback. SB1 admitted that part of the negative experience was caused by her neglect of implementing necessary change and being more consistent. She explained, "…I think…I have to be more consistent as a teacher and follow through, that's on me and I have to choose to do that, I don't think a mentor could necessarily help do that either" (SB1 Interview, 2018). Her mentor, SBM, hinted that the lack of progress with SB1 could also be related to weariness as the participant has to drive an hour each way in her commute to work. Findings were similar for the participants at School A where two of the participants shared negative experiences from the mentoring program. SA1 explained that she initially struggled with her mentor's feedback because she felt it did not make sense and she felt her mentor was disregarding her needs and perspectives. She admitted that, in the early days, she and her mentor were still getting to know each other and learning how to understand each other's expectations. These findings indicate that transition periods influenced the quality of feedback the mentor provided and how this advice was received by the new teacher, as in SA1's situation.

That resistance to feedback was also something SA2 experienced when her mentor "put her on the spot" by requesting that she completely change her lesson plan for her afternoon lessons (SA2 Interview, 2018). The mentor added that she would be returning in the afternoon to observe the revised lesson. This request was completely unexpected, and SA2 felt it was quite unfair to make last minute changes particularly since state testing was ongoing. She explained that between the lesson plans and testing, "…my desk ended up having to be moved four times that day and…it was just too much" (SA2 Interview, 2018).

Another negative experience the participants mentioned was the impractical caseload their mentors each carried. Because the mentors were expected to travel between different schools, they were not physically based at the respective building. Some participants, SA1 and SA3, shared that they would have preferred their mentor to be permanently located at their building thereby affording them the chance of "a quick chat in the hallway or drop-in the classroom." As with the mentors, the teacher participants were overwhelmed with their own administrative duties in addition to their teaching load and the numerous meetings, professional development sessions, and school activities they were expected to attend. As SAM explained, the NTC mentoring program has a list of expectations and requirements for both the mentees and mentors. However, these findings suggest that quality mentoring would sometimes be sacrificed in favor of their professional obligations. The same finding applied to mentors: with a large caseload, other administrative duties, and their own professional development workshops, they were left with little flexibility in their schedules. Mentors indicted that they could not meet with their mentees as often as they wished. In fact, one of the recommendations SB2 had was being able to meet with her mentor more often, as much as several times a week.

Informal Support Outside of the School Setting

Friends and family. Analysis of interview transcripts also indicated that some novice teachers also sought support from individuals who were not district employees. This support network was represented in Figure 4 sociogram whereby SA1 was the only new teacher whose network included relationships outside the school district. SA1 explained those relationships in her interview. Of the two individuals that SA1

mentioned, one teaches in another district, and the second is her boyfriend. SA1 would often turned to her friend, who was also a teacher, for advice and recommendations on dealing with specific situations. SA1 found the connection very helpful as she offered a different perspective because "…she's got different resources and, you know, a different support network…" (SA1 Interview, 2018). She indicated that she valued her friend's advice and stated that she felt "[more] comfortable coming to her and asking questions that [she] might not especially want to ask other people who are more experienced" (SA1 Interview, 2018). Her contact also provided her with very helpful resources, such as intervention research for reading lessons which has yielded positive outcomes for her students. As she explained, "…she gave me really great resources, like an intervention research for reading and so…that's been really helpful" (SA1 Interview, 2018).

While she did not indicate any connections outside of the district in her survey responses, SB2 shared, during her individual interview, that she occasionally turned to her husband for emotional support and understanding. SB2 took over a very challenging class halfway through the semester and struggled with classroom management. She added that after a challenging day with her students, she would vent her frustrations with her husband. Being able to be candid with someone outside of the school underscores the lack of openness she expressed with the other teachers in her team. Teacher SA2 indicated she was unable to be as vulnerable and open with her fellow teachers by stating, "…but I try to…not blast it out there to everybody I know" (SA2 Interview, 2018).

Social media. One participant from Building A and one from Building B shared that they used external resources of support including books, internet resources, friends, and family for resources and support. Teacher SA1 explained that she spent the summer

reading and "thinking about [her] weak points and …improving over these" (SA1 Interview, 2018). Another resource that SA1 used was "Teachers Pay Teachers" which is an online platform designed by teachers for teachers. This platform provides teachers with an opportunity to purchase a digital download of resources they needed for a specific lesson. Other resources were free, which is something SA1 appreciated (SA1 Interview, 2018). Teacher SB2 used social networking sites, such as Pinterest, for ideas on specific issues such as unruly students (SB2 Interview, 2018). Most of these online resources originated from teachers themselves, suggesting that they represent teachers helping each other.

Summary

The chapter began with a presentation of the data providing an overview of the school district, the two elementary schools, and the participants. To provide a general overview of the social network survey data, I created a table detailing the averages of the ties the participants had for professional support and for emotional support. The scatterplot matrices analyzed the strength of these relationships (professional support and emotional support) against the frequency of meetings between the participant and their respective connections. To establish contexts of these relationships, sociograms offered a visual representation of building-based (or internal) relationships and district-based and other external relationships. The chapter concluded with an analysis of data collected from interviews, observations, and documents. This was followed by a discussion of the various themes that emerged from data analysis, providing an extensive perspective of the relationships that existed at both schools and how these relationships were reflected in the mentoring program.

CHAPTER V

FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Chapter IV consisted of a presentation of the data collected in this study. The data sources include social network surveys, interviews, observations, and documents. Chapter IV began with a thick, rich description of Allegiant School District and of School A and School B. The chapter also included a detailed analysis of the different levels of relationships that exist within the participants' social networks. The data analysis led to the emergence of the following themes: communication, building-level support, district-level support, informal support outside school setting, and professional development. Chapter V consists of a summary of the study, a discussion of the findings through the research questions and theoretical framework of Social Network theory, followed by conclusions of the research. Conclusions are drawn from these findings and their implications for practice, research and theory. The chapter concludes with recommendations for future research and practice.

Summary of Study

It takes time and experience for teachers to achieve proficiency, as much as seven years (Harris & Sass, 2011), and there is a gap between teacher preparation and the skills to achieve professional success. Research indicates that approximately 50 percent of teachers will leave the teaching profession within the first three to five years of their profession (Ingersoll, 2001; Ingersol & Perda, 2013). This turnover negatively affects students' academic performance and brings uncertainty to the school environment (Hanushek, Rivkin, & Schiman, 2016). The negative and long-term impacts of a teacher attrition has meant that providing effective support to novice teachers should become a crucial component in education.

Effective support has been shown to enhance satisfaction at work and smooth the transition process of new teachers (Rondfelt & McQueen, 2017; Stanulis & Floden, 2009). A common approach school districts are undertaking in reversing this trend is providing new teachers professional support by assigning veteran teachers to mentor the novice teacher during the transition process. The mentor would typically be teaching the same subject area and school grade. However, research has revealed mixed successes of mentoring programs (Marable & Raimondi, 2007; Richter, Kunter, Lüdtke, Klusmann, Anders, & Baumert, 2013). In many states, ongoing budget cuts have left school districts with little choice but to sacrifice needed support and training to teachers, especially novice teachers (Sanders & Lewis, 2005; Lucillio, 2009). One possible reason for the mixed success may be a lack of social interaction to support and enhance resource exchange that leads to professional growth in mentoring relationships. Jordan (2006)

suggested that the quality and quantity of the interaction between mentor and mentee is a crucial determinant in the retention of new teachers.

This has led to renewed efforts by school districts and non-profit programs, such as New Teacher Center, to identify innovative and sustainable mentoring program, such as the centralized mentoring program. This trend pairs teacher mentees with mentors that serve the district through a centralized mentorship program (Hanson & Moir, 2008). These mentors are removed from classroom teaching and from the buildings in which teaching takes place, and their primary responsibility is to serve teachers across the district. Because social network research indicates that the success of novice employees can be influenced by their network connections at work (Biesta, Field, Goodson, Hodkinson, & MacLeod, 2008) a better understanding of the relationships and supports that exist in centralized mentoring programs may provide an understanding of factors that influence the success of these programs.

Through its centralized approach, the New Teacher Center believes in developing and enhancing relationships novice teachers develop during the course of their career, particularly at the beginning of their career. Social capital theory (Bandura, 1989), theorizes that relationships between individuals provide access to social capital that can influence success. Therefore, it is logical to assume that interactions between mentor and mentee that facilitate resource exchange result in more satisfactory and more successful transitions into the profession. Because social network research indicates that the success of novice employees can be influenced by their network connections at work (Biesta, Field, Goodson, Hodkinson, & MacLeod, 2008) a better understanding of the

relationships and supports that exist in centralized mentoring programs may provide an understanding of factors that influence the success of these programs.

The purpose of this study was to gain a better understanding of the patterns of relationships that existed in this district level approach to teacher mentoring. Having a better understanding of "the frequency and interaction patterns of communication and knowledge [that transfer between mentoring] groups" (Daly & Finnigan, 2010, p. 113) provides an understanding of factors that influence these centralized programs.

The following research questions guided the study.

1. What is the underlying social network structure of support for new teachers at each respective school?
2. How is the New Teacher Center Induction Program represented in this structure?
3. What does the network structure suggest about the flow of communication and capacity for new teachers to develop professionally?
4. What are participants' perceptions of the resources embedded within the social network?
   a. How do new teachers perceive the mentorship they receive from the New Teacher Center Induction Program?
   b. What other resources do novice teachers perceive as important outside of the New Teacher Center?
5. How does social network theory explain these findings?

Because this research sought to study the pattern of mentoring relationships embedded in the NTC program at two elementary schools in a large urban school district,

a comparative case study design using social network analysis was chosen as a means to understand the relationship patterns in the New Teacher Center program. This methodology also allowed for an in-depth study of two elementary schools within the Allegiant School District, School A and School B. Data collected for this case study began with a social network analysis survey taken by the novice teachers and their mentors who were participating in the NTC mentoring program, interviews with seven novice teachers and two mentors, ten observations between mentors and their mentees at both school sites and reviews of documents used in the mentoring program and by the district.

Findings

Chapter IV included an analysis and presentation of data. The following section will discuss the main findings that emerged from data analysis organized by each research question.

Research Question One

What is the underlying social network structure of support for new teachers at each respective school? Findings indicate that most of the participants' network connections were for professional support rather than emotional support with some of the participants turning to the same individual for both professional and emotional support. Findings indicated that the participants' social networks were sparse and disconnected, with little overlap in networks between school sites. The number of network connections ranged from one to six. Most of the novice teachers' connections were one-way relationships with very few connections between mentees, with the exception of a tie

from SA2 to SA1 at School A. However, this tie was not was not reciprocated by teacher SA1.

Data analysis revealed that the relationships the participants turned to for professional support were with school district employees, with a preference their building-based connections over their mentors. As indicated in Table 2, the most frequent building-level ties were with the teacher's team lead, teachers from their team, and teachers from other grades. All teachers, with the exception of SB3, turned to their team lead and other teachers for both professional and emotional support.

Professional support was accessed through various forms, including professional development during team meetings, assistance on developing their lesson plans, advice on preparing their classrooms, and sharing of materials and other resources. Table 2 also indicated that while all the novice teachers sought professional support from their mentor, the participants indicated a weaker relationship compared to their building relationships. With regards to emotional support in their teaching and learning, the majority of participants also indicated their preference in accessing resources through their building-level support over their mentors. While every participant listed her mentor as a source of professional support, only three teachers turned to their mentor for emotional support. Unlike the relationships providing professional support, several teachers also maintained social connections beyond their school district, such as with friends and family. Emotional support came in the form of words of encouragement from friends and family members with whom they could confide concerning their experiences.

Evidence suggests that novice teachers from School A had larger social networks than the novice teachers at School B. The teachers from school A also maintained

stronger relationships as Table 2 indicates a higher frequency of interaction between teachers and their ties and they perceived most of their ties as very important to them compared to the teachers at School B. As such, interview data suggests that novice teachers at School A received more input and influence in their professional development as a result of having a larger social network. Having a wider network of support, also meant novice teachers could seek support from teachers other than their immediate team members. For example, teacher SA3 received constant support from the English Language Learner (ELL) teacher when her class experienced several turnovers of teaching assistants. Novice teachers from School A had more connections with ties they could access for specific needs. For example, while SA1 had frequent interactions with teachers in at her school; she also frequently turned to her friend for emotional support in her teaching and learning. Teacher SA2 turned to her husband for emotional support and shared her experiences, especially the challenging ones.

Research Question Two

How is the New Teacher Center Induction Program represented in this structure?

Three teachers from School A and four teachers from School B received mentoring from the New Teacher Center Induction Program (NTC). Figures 3 and 4 reveal that, while all novice teachers interacted with their district-based mentor, the mentor was the only contact the teachers had with the NTC program. Even when assigned the same district mentor at their respective building, interview data revealed that teachers rarely interacted with other mentees within their building or within the school district. In fact, during my first visit at School B, I met with teacher SB1 and queried whether she knew of other teachers participating in the mentoring program. Unfortunately, she could not provide

any names, and the one teacher she suggested as a possible contact, who also happened to be one of her friends at the building, was not part of the mentoring program.

While the novice teachers sought advice from their mentor, they also turned to other connections for professional and emotional support. In fact, the mentee teachers maintained stronger connections at their respective school site than with their assigned mentor. The limited representation of the NTC program within the teachers' networks, also translated into limited communication that existed between the novice teachers and the district's central office overseeing the professional development of new teachers. Even SA3 explained that while she had a chance to briefly meet with other mentees in the NTC program during initial professional development workshops at district level, there were no other formal opportunities for novice teachers to engage with each other thereafter. As such, the mentor was the only channel of communication between the novice teachers and the district. However, novice teachers were only able to access these resources during their mentor's visits which, in some cases, could be every week or every two weeks. In other instances, resources were exchanged between the mentor and mentee through online platforms or through electronic communications.

Research Question Three

What does the network structure suggest about the flow of communication and capacity for new teachers to develop professionally? Participants explained that they needed as much support as possible if they were ever going to manage the challenges that came with starting at a new school or in a new district. As such, the teachers from both school sites indicated that they were always in search of professional advice and support. However, evidence indicates that they tended to focus more on their building-level

support, largely because these relationships were convenient and easier to access. For example, SA3 initiated contact with her colleagues by asking them, “can I come to you if I need help? Cause I needed to know who I could go to…” (SA3 Interview, 2018). These relationships presented the novice teachers with a variety of resources to enhance their teaching and learning skills.

Despite the minimal flow of communication and exchange of resources, the majority of participants also expressed how their mentor enhanced their professional development. Participants viewed their mentors as an extension of the support they received at their building. Interview data reveal initial resistance to their mentors’ recommendations by some teachers; however, over time, the teachers appreciated the practical and individualized feedback their mentor provided. Such feedback paid dividend in their lesson planning and classroom management skills. For example, SA3 described meetings with her mentor as an opportunity to engage in critical feedback, rather than as a punitive experience. Therefore, evidence indicates that while each tie played an important role of the novice teacher’s professional development, the relationships the teachers had within their respective building significantly differed from the mentor-mentee relationships.

Research Question Four

What are the participants perceptions about the resources embedded within the social network? The novice teachers had access to different resources within their respective social networks. The main source of these resources were building-based relationships. Interview data revealed their proactive efforts in mobilizing and accessing these resources. Team meetings provided opportunities for veteran teachers to share their

experiences with new teachers, allowed teachers to work as a group, assist each other in developing lessons plans, and discussing ways on improving their students' performance. Maximizing these resources certainly paid dividend as SB3 confirmed the "…guidance…really helped tremendously" (SB3 Interview, 2018).

Sub-question one. *How do new teachers perceive the mentorship they receive from the New Teacher Center Induction Program?* The majority of participants, with the exception of teacher SB1, appreciated the support they received from their mentors who focused on their classroom management and teaching skills. For example, teacher SB2 explained that her mentor has taught her to become more disciplined educator and how to apply proper teaching methods and strategies. The mentors' personality and teachers' perception of the mentoring program contributed in the trust that mentees had in their mentors, which solidified as the school year progressed. As such, participants were more open to suggestions from their mentors than they were at the start of the semester. For example, SA1 shared her initial reluctance in accepting her mentor's recommendations on how to set up her classroom. However, with time she came to appreciate and even seek out advice from her mentor, SAM. Such is the close relationship most participants had with their mentors and the benefits the mentoring program offered to novice teachers; participants also expressed relief when told that they would continue to receive mentoring from the district throughout their third and fourth years.

Sub-question two. *What other resources do novice teachers perceive as important outside of the New Teacher Center?* The participants also recognized the multitude of resources external resources, such as social media provided them. Online resources allowed for the informal exchange of materials and resources for classroom

lessons that had been developed by other teachers. Another participant, SA1, also reported gaining support from other acquaintances outside of the school district, including family and friend.

Research Question Five

How does Social Network Theory explain these findings? Social Network Theory (SNT) "posits that social structure, or the web of relationships among individuals, offers opportunities and constraints for the exchange of resources" (Moolenaar, 2012, p. 11). A teacher's social network is defined by his or her relationships with other teachers, students, with others in the school district, and even ties beyond the school district. The theory assumes that support (in the form of social capital), resources, and information can be exchanged in relationships between individuals.

A central component in social network is social capital which are defined as resources that are present in these social relations and can be accessed and mobilized to achieve a specific outcome (Lin, 2001). According to Lin's model of Network Theory of Social Capital, recognizes that access to social capital can be influenced by positional elements and social capital allows for the accessibility or mobilization of these embedded resources (Lin, 2005). Daly et al. (2015) posit four critical aspects in social network theory to help understand the social processes between the actors:

1. Actors are assumed to be interconnected and interdependent (Wasserman & Faust, 1999).
2. Relationships, or ties, allow the flow and exchange of resources (or the assets in the network) between actors (Burt, 1997). This is where social capital is viewed

as a community-held asset, and social network analysis is applied to examine ties between individuals in the social network (Baker-Doyle, 2012).

3. The flow of resources (or social capital) to and from the individual is influenced by the network structure.
4. Social networks can either constrain the use of resources or yield opportunities for collective good (group level) and the individual actor (individual level).

The following section will discuss findings from this study and organized according to the four aspects above.

Interconnection and interdependence. Because these new teachers were based at the same school site and participating in the same mentoring program, there was an assumption that novice teachers would be interconnected and interdependent. However, data analysis did not reveal any interconnection between and within the participants. The novice teachers, however, did share mutual connections within their respective school buildings. For example, all the novice teachers at their respective building had their district-based mentor as one of their ties for professional support. Evidence also suggested an absence of interdependence between and within the novice teachers; with the exception of teachers SA1 and SA2. Despite sharing the same mentor, there was no overlap within the participants at the same building and between other novice teachers participating in the NTC mentoring program. However, data analysis revealed that the only commonality the novice teachers shared were the ties they had with the same individuals from their building, such as teachers in their team meetings and building administrator, and with their mentor.

Flow and exchange of resources. The ties maintained by the participants in their respective networks facilitated the flow and exchange of resources, either in terms of professional support or in terms of emotional support. These resources included advice, encouragement, location of teaching materials, and identification of classroom management tools. Participants indicated that the more time spent together in team meetings, for example, the more comfortable they became in accessing the resources these relationships offered, such as information exchange during the group's lesson planning. Despite the limited number of meetings between mentor and novice teachers undermining the flow and exchange of resources, the majority of participants reflected on the positive impact their mentors had on their professional development. The positive effect the mentoring relationships had on novice teachers were noted during mentors' observations and meetings between mentor and mentee. The novice teachers noted an improvement in their confidence and in their ability to implement necessary changes underline the presence and effectiveness of the transfer of resources from mentor to novice teacher.

Flow of resources influenced by the network structure. Novice teachers mobilized a variety of resources from different resources, most of which were accessed from their building-based ties. Team meetings allowed for the exchange of information when preparing their lesson plans. Novice teachers also received classroom management support from other teachers. The district-based mentors also provided novice teachers with instructional techniques and training materials to enhance their instructional skills. The directionality of the flow of resources, as indicated by the arrows, indicated a one-way flow of resources, benefitting the novice teacher. This directionality may be

reflective of the learning process any professional undergoes at the start of his/her career. Part of this process of transitioning into a new profession is to nurture potential relationships within the building that could provide the advice and support they require. For example, while SB3 had the smallest network, the resources, such as classroom management tools, available within her network were sufficient for her respective needs. While describing herself as being self-sufficient, SB3 realized that being resistant to any form of support would be counter-productive to her professional development as a new teacher. Maximizing the availability of available resources certainly paid dividend as SB3 noted how the "…guidance…really helped tremendously" (SB3 Interview, 2018).

Social networks constrain or yield opportunities. Evidence suggests that novice teachers valued their social connections because they allowed for the flow and exchange of information. These connections yielded important opportunities for the novice teachers to grow. For example, SA3 explained her colleagues' support and guidance helped balance out the frustrations she experienced at the start of her job and how her team lead "…was there for [her] tremendously which was helpful…" when she really needed guidance (SA3 Interview, 2018). Most notably was the role the mentors played within their mentees' social network, which was more of a supportive role, rather than evaluative one. The novice teachers felt they offered "true support" rather than "expressing their expertise in the classroom," and were more receptive to their feedback, even when it "missed the mark" as in teacher SB1's experience.

On the other hand, evidence also suggests that while there was some social capital generated between the mentor and their teachers in the form of advice and provision of teaching materials, these relationships were not being maximized to the full potential

available within the mentoring program. There was limited interaction between the novice teachers. As such, the teachers' respective social networks ultimately limited the potential transfer of knowledge and resources between participants (Prell, 2012). Specifically, teachers are missing opportunities to share their learning as they grow and develop in their teaching practices. Additionally, in limiting their social network, participants missed an opportunity to exchange classroom management and instructional tools and with other novice teachers at the collective level (at the building level) which could have benefited their professional development.

Conclusions

In this study, I wanted to understand whether social relationships enhanced the success of these mentoring program by allowing for the access and exchange of social capital necessary for the professional growth of teachers, specifically, in relation to mentoring relationships. A recent trend in mentoring programs is to pair the teacher mentee with a district-based mentor. As such, I wanted to examine the patterns and directionality of relationships that were established within this mentoring program at two elementary schools in a large urban school district. In addition, I wanted to examine the participants' perceptions about the resources embedded within the social networks in the program. Through social network surveys, observations, interviews, and document analysis, I found that having larger social networks provided novice teachers with more social capital than teachers with smaller social networks. While the mentoring relationships generated social capital, the absence of interconnectedness and interdependence between the novice teachers constrained the potential social capital that

could have been generated. These findings led to several conclusions regarding the social networks and mentoring relationships of novice teachers in the district.

Conclusion 1: In this study, novice teachers generated support through both formal and informal sources within their social networks. Participants discussed supports they received through formal and informal channels. Novice teachers' formal sources of professional development included observation and feedback sessions with their principal or assistant principals and interacting with their team lead and other teachers from the same grade level during team meetings. These building-based relationships were often the first introductory form of support participants received when starting the semester. The school district also provided formal support through their centralized mentoring program. Novice teachers indicated that the mentor's sole responsibility, as they were operating as full-time mentors, was to conduct observations of their mentee's classroom and teaching skills, provide feedback, and refer the mentees to a variety of professional development tools.

Participants also shared examples of informal supports they received. Most of these were informal interactions with their team members and casual conversations with their teachers from other grades. Evidence suggests that teachers took a proactive approach in seeking out these informal supports which facilitated their transition into a new building. Participants identified areas they knew they needed to improve upon and took an agentic strategy in seeking out resources to enhance their learning. Through their own cognizance, participants developed a social network with individuals they trusted and felt comfortable with. When they felt a particular resource was not sufficient enough, they did not hesitate to approach other informal ties they maintained with friends and

family. None of the participants expressed hesitation in reaching out to others for support. This finding confirms their determination to overcome whatever challenges they faced in their profession.

Conclusion 2: In this study, novice teachers had stronger relationships with their colleagues than with their mentor. Survey data revealed that the majority of connections in the participants' social networks were with their building site colleagues. In terms of professional support, participants had stronger relationships with their colleagues than with their mentors. However, it was interesting to note that the perceived importance of those relationships did not always pair with the frequency of interactions between the novice teachers and their respective ties. For example, the scatterplot matrices in Appendix F reveal that the minimal interactions teachers SA2 and SA3 had with other teachers at their school did not undermine the importance of those relationships. Similar observations were made in relation to individuals participants turned to for emotional support in their teaching and learning.

Another point of interest was that even though participants were assigned a full-time mentor, the building-based relationships mattered more to the participants. Survey results illustrated how important these social connections were for novice teachers. Being located in the same building, even within the same hallway, acted as a conduit for these relationships to develop organically. While some of these social connections were imposed, such as being assigned to a team lead and team based on grade level, these relationships provided participants with a sense of belonging to the building and to the profession (Struyve et al., 2016).

The importance of building-based relationships underscores the importance the role veteran teachers and building leaders play in the professional development of novice teachers. This suggestion does not in any way undermine the importance of mentors, especially district-based mentors. Rather, research indicates that mentors play a crucial and instrumental role in alleviating teacher attrition (Struyve et al., 2016). However, not being permanently based at the building could have impacted the transition process for both mentors and mentees. Interview data indicated mentors' struggle with such a heavy caseload prevented them from spending sufficient time with each novice teacher. Having weaker relationships with their mentor was not indicative of the participants' lack of appreciation of the resources accessed from this social connection. Rather, some participants would have preferred their mentors maintain a more permanent presence at their building, thereby increasing interaction between mentor and teacher. Had this been the case, participants may have reported increased strength in their mentoring relationship. Findings from this study suggest that district leaders and building leaders should pay special attention in promoting an equitable access to both collegial and mentoring supports as participants clearly indicated their importance of both relationships in their learning process.

Conclusion 3: While the centralized mentoring program delivered additional benefits to the novice teachers learning experience, the program is not being maximized to its fullest potential, leading to potential resources being missed. Teacher SB1's experience suggests that merely assigning full-time mentors to novice teachers does not automatically ensure the access and exchange of social capital in mentoring relationships. There was no attempt to facilitate socialization between and within the mentees in the

district, let alone in the same building. Evidence suggest that novice teachers require frequent and continuous interaction with their mentors in order for these social connections to succeed. Mentors suggested that these interactions begin with a manageable caseload thereby allowing mentors sufficient time to plan and meet with their mentees on a regular basis. As such, the mentor's role becomes that of a facilitator in the socialization of novice teachers and a constant source of resources. These findings suggest that building leaders and district leaders should be more proactive in identifying and addressing the current challenges of the mentoring program. Allowing the mentoring program to continue in its current structure may act as a disservice to the mentors and mentees. Rather, stakeholders should implement conditions to support the socialization process in these mentoring relationships in schools and at district level; thereby maximizing the potential social capital that could be generated compared to what is currently available.

Implications and Recommendations

The findings and conclusions led to the following implications and recommendations for practice, research, and theory. These recommendations may assist school districts in enhancing the professional development of novice teachers through district-based mentoring programs. While these recommendations would specifically apply to elementary schools, they may be transferrable to other sites and school districts.

For Practice

This study has implications for district leaders, school leaders, and other stakeholders in education by providing an understanding on the perceptions of district-based mentors and their mentees about the resources embedded within these social

networks. The network structures that support the flow and exchange of resources may inform administrators, educators, and other stakeholders concerning their own mentoring programs.

Often mentoring "took a backseat" to the mentee's administrative responsibilities and other activities taking place at the building. As a result, mentors and mentees found it difficult to find opportunities to engage in quality mentoring sessions. Additional research is needed to understand how relationships would form if the school district expands on the transition time for novice teachers by allowing them to connect with their mentor before the semester began. This would allow more time and flexibility for both mentor and mentee to connect, develop a better understanding on the mentee's specific needs, and facilitate the exchange of resources effective in the teacher's professional development.

Other participants expressed how overwhelmed they felt during the professional development workshops they attended before the start of the semester. Additional research is needed to determine the effect of providing pertinent information and training materials in a timely manner, instead of right before the semester begins. Early availability could provide the mentees more time to peruse and digest this information at their own. Mentees also suggested that professional development workshops during the summer semester could be very helpful during the transition process, instead of having all of them compressed into the last week before the start of the school year. Findings from this study support this contention by suggesting that earlier availability of resources could allow mentees to digest all the new information shared with them as well as time to

initiate and, hopefully maintain, social relations with other novice teachers they would meet during these workshops.

Currently, the district-based mentors' caseload is more than what NTC recommends. Oftentimes mentors are unable to maintain a weekly schedule with their mentees, and they are often pressed for time as they have to visit several different school sites during the course of the day. There is also concern that the buildings and district could be losing out on possible resources and opportunities. Implications for practice indicate that the district could review its current plans when assigning mentors their caseload. A more manageable caseload would encourage a more cohesive social network with mentors and mentees exchanging pertinent resources. A more effective presence of mentors at school sites would also encourage more interaction between the novice teachers. However, limitations in funding in this State may preclude smaller caseloads for district mentors. However, findings from this study suggest that increased funding could allow Allegiant School District to provide a more structured mentoring program, and it could also increase the number of district-based mentors, thereby ensuring they are maximizing the exchange of potential resources.

Another important finding from this study suggests that additional networking opportunities for novice teachers at both building and district level, through networking events, could enhance support networks for these novice teachers. These networking events could allow new teachers to enhance their social networks and maximize the exchange of resources, especially for those who have minimal support at their school site. Additional research is needed to determine if this assumption is accurate. Another important implication from this study is mentee desire for building leaders to present

more opportunities for novice teachers to take ownership of their own professional development. For example, one novice teacher explained that some of the training she received did not relate to her grade. Another commented how the training material did not reflect the actual reality of her class. When teachers are allowed to choose areas they believe they need, the result could be increased real-time coaching sessions and the opportunity to shadow veteran teachers. Novice teachers may also benefit from some degree of choice in selecting topics of professional development that more likely addressed her or his specific challenges.

For Research

This study will add to the existing body of research in relation to the concepts of social networks in mentoring programs. The study will also bolster existing research relating to mentoring of new teachers and increasing teacher retention through social supports. Current research has focused on building-based mentoring programs; however, this study extends current research by exploring social connections within a centralized mentoring program. Additionally, this study adds to current understandings in the literature by examining both professional support networks and emotional support networks. The traditional mentoring program has building-based mentors, which requires significant financial resources and is time-consuming on the mentor who would typically also be responsible for her/his own classroom and other administrative duties. However, this study also revealed numerous missed opportunities to maximize the exchange of resources between and within the participants and their mentors. As such, it be beneficial to explore the possible resources that could be generated if mentees connected with each other.

This study explored patterns of relationships embedded in a centralized mentoring program at one point in time. Allegiant School District plans on continuing supporting new teachers into their third and fourth year. Future research could include a longitudinal study of the mentoring program during the first four years of the teachers' employment in the district. Such study could also assess the longitudinal effectiveness of the mentoring programs in terms of the retention rate of new teachers in the district. Another study could study the correlation between a centralized program and teacher efficacy. A future study in Allegiant School District or another district applying the NTC mentoring program could be replicated but with include more schools of the same level, such as all elementary schools, to increase the sample size. A larger sample size would result in more data from more actors in the district, especially mentors since only one mentor is assigned to each school site. As such, more data would generate sociograms that would provide a more accurate representation of the social networks that exist in the school district.

To Theory

This study has implication to theory through the application of Social Network Theory to a centralized mentorship program. Current literature, such as those by Daly and Finnigan (2012) looked at social networks between administrators and teachers. This research contributed to social network theory (SNT) by examining the patterns of social relations that are embedded in the NTC mentoring program. The NTC mentoring program delivers a unique approach to mentoring of novice teachers whereby the school district reaches across boundary lines and extends mentoring into school sites. The study showed how SNT can be useful in explaining the patterns of relationship between actors

in the program, the strength and directionality of relationships, and the resources generated in these relationships.

Limitations of Study

Several limitations exist in this study. While social networks are typically widespread, often crossing boundaries, this study examined patterns of relationships that were in a bounded network over a specific period of time. Being a qualitative study, the findings can only be applied to the respective school district. The findings cannot be generalized across an entire population.

In addition, the study included a very small sample as it was limited to teachers participating the in the NTC mentoring program from two elementary schools in a large urban school district and their district-assigned mentors. There were nine participants in total, three teachers from school A and their district-based mentor. Four teachers and their district-based mentor participated from School B. There was a possibility that the small sample size could skew the findings of the study. However, multiple data sources were collected and analyzed over an extended period of time to provide a deeper and richer understanding of the subject matter and maintain the credibility of the study.

Lastly, during the process of data collection, teachers in this Midwestern state participated in a teacher walkout that lasted approximately two weeks. I did not anticipate the teacher walkout which saw teachers from across the Midwestern state in protest of tax cuts, overcrowded classrooms, and low pay. The walkout severely disrupted the data collection process as two weeks prior to the walkout, the district also imposed strict adherence to the teachers' "work-the-contract" which meant teachers were required to work within their contracted hours. This limited the meetings I could schedule with the

participants during that period. Unfortunately, the walk-out also proved to be a distraction to the teachers, administrators, and students. After the strike, school districts were pressed to catch up for the lost time and teachers were pressured to prepare their students for state testing in a much shorter time period than they would typically have had. I tried to overcome this limitation by spending an extended amount of time at each school site, meeting and observing mentors and mentees to better understand which data related to the walkout and which data related to the mentoring program.

Summary

The purpose of this study was to examine the patterns of mentoring relationships embedded in a centralized mentoring program at two elementary schools, and to identify, if any, the patterns of relationship networks that existed in the mentoring program. Additionally, the study sought to examine participants' perceptions about the resources embedded within the social networks in the program. Data collection took place over the course of a several months, after which thorough analysis was undertaken using Social Network Theory as the theoretical lens.

Based on the above conclusions, findings from this study emphasize the importance of relationships in general and relationships that develop in the workplace can either enhance or minimize an individual's commitment to their work and their career (Fisher, at al., 2018). Through its centralized mentoring program, the New Teacher Center focuses on enhancing the support systems which, as research indicates, greatly influences a teacher's professional identity and teaching philosophy (Clandinin, et al., 2015). These social relations not only provide support to novice teachers as thy transition

into a new profession, but also enhance their professional development experience and increase instructional quality (Moolenaar & Daly, 2012).

The findings also suggest that novice teachers also require day-to-day support and social interactions as they transition into a new workplace and as evidence suggests, their building level colleagues offered a different level of support than that of their mentor. Nevertheless, the participants also maintained the importance of their relationship with their mentor. While data analysis indicates that the novice teachers maintained stronger relationships with their building-based colleagues, evidence confirms that mentoring relationships can also have a positive impact on a novice teacher's professional development as determined through the dual role mentors provided to their mentees in this research, professional and emotional support.

The supportive role mentors played in this research underlines the importance of the resources and support mentors provide in addition to the building-level support. However, weaker mentoring relationships indicates that ensuring equitable access to both building-based and district-based supports is crucial to a successful comprehensive professional development experience for novice teachers. Equitable access can begin with a change in perception on the importance of mentoring, thereby leading to increased investment of resources and ensuring quality interaction between mentor and teacher mentees. In line with the research purpose, this study reinforces the importance of relationships, at both building and district-level, in ensuring the success of novice teachers and their continued presence in the classrooms.

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APPENDICES

APPENDIX A

SNA Survey for Mentor

Participant:

School Identification Code:

Social Network Analysis Survey For Mentors

The purpose of the survey is to identify personal and professional relationships you may have with the district mentees and other individuals within and outside the school district.

1. Please select the category that contains your age:

_____ 29 or younger _____ 30-39 _____ 40-49 _____ 50-59 _____60-69 _____ 70 or older

2. Gender: _____ Male _____ Female _____Other _____ Prefer not to answer

3. My race/ethnicity is most closely described as (Please circle all that apply):

American Indian Asian African American Hispanic White/Caucasian Pacific Islander Multiracial

4. Have you been assigned a mentee? _____ No _____ Yes

5. If yes, number of mentee(s) that you currently supervise

_____ 1 _____ 2 _____ 3 _____ 4 _____5 _____ 6 _____ more than 6

6. How many hours per week do you interact with each mentee on average?

_____ 0-1 _____ 2-3 _____ 4-5 _____ more than 5

8. Does the amount of time that you spend with mentee differ or do you spend about the same amount of time with each mentee?

_____ Same number of hours _____ Different number of hours _____ I only have one mentee

9(a). If different, please explain below

10. Years working in your current school district

_____0 to 2 years _____ 3 to 5 years _____6 to 9 years _____10 to 15 years _____ over 15 years

11. Total number of years in the education profession

_____0 to 2 years _____ 3 to 5 years _____6 to 9 years _____10 to 15 years _____ over 15 years

12. Please list initials or name of mentees that you are currently working with during the 2017-2018 school year.

Directions: Next to each name or initial, please indicate how many years have you worked with this mentee and how rate how productive you feel this relationship is for promoting your mentee's growth.

	Circle the number of years you have worked with this mentee						Circle the number that best reflects how productive you feel this relationship is for promoting your mentee's growth					
Initials or name of mentee	**Years**						**Not Productive at all**					**Very Productive**
1. _____	1	2	3	4	5	6	1	2	3	4	5	6
2. _____	1	2	3	4	5	6	1	2	3	4	5	6
3. _____	1	2	3	4	5	6	1	2	3	4	5	6
4. _____	1	2	3	4	5	6	1	2	3	4	5	6
5. _____	1	2	3	4	5	6	1	2	3	4	5	6
6. _____	1	2	3	4	5	6	1	2	3	4	5	6
7. _____	1	2	3	4	5	6	1	2	3	4	5	6
8. _____	1	2	3	4	5	6	1	2	3	4	5	6
9. _____	1	2	3	4	5	6	1	2	3	4	5	6
10. _____	1	2	3	4	5	6	1	2	3	4	5	6
11. _____	1	2	3	4	5	6	1	2	3	4	5	6
12. _____	1	2	3	4	5	6	1	2	3	4	5	6

13. As mentor, please list initials of individual(s) that you turn to for advice for working with your mentee(s)?

Directions: Please list position or relationship of the individual. Next to each individual, please indicate whether the person is part of the New Teacher Center program, the position or relationship of the individua, the amount of time you talk to the individual and how important this relationship is to you as a mentor. If you do not talk to anyone, write "none" next to number 1. If there is not enough room in the space provided, please use the back of the survey to list additional.

			Circle the number that best reflects how often you talk with the individual						Circle the number that best reflects how important this relationship is to you.					
Initials of individual	**Is this person a part of New Teacher Center? Yes (Y)/No (N)**	**Position or relationship of individual to you**	**Once in while**					**Daily**	**Not helpful**					**Very helpful**
1. _____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
2. _____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
3. _____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
4. _____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
5. _____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
6. _____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
7. _____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
8. _____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
9. _____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
10. _____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
11. _____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
12. _____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6

14. Is there anything else you would like to share concerning your experience with the mentoring program in the district? If so, please add that information here.

APPENDIX B

SNA Survey for Mentee

Participant Code:

School Identification Code:

Social Network Analysis Survey For Mentees

The purpose of the survey is to identify personal and professional relationships you may have with the district mentor and other individuals within and outside the school district.

1. Please select the category that contains your age:

_____ 29 or younger _____ 30-39 _____ 40-49 _____ 50-59 _____60-69 _____ 70 or older

2. Gender: _____ Male _____ Female _____Other _____Prefer not to answer

3. My race/ethnicity is most closely described as (Please circle all that apply):

American Indian Asian African American Hispanic White/Caucasian Pacific Islander Multiracial

4. Have you been assigned a district-based mentor? _____ No _____ Yes

5. If yes, how many hours approximately per week do you interact with your mentor?

_____ 0-1 _____ 2-3 _____ 4-5 _____ more than 5

6. Overall, how do you rate your experience with your mentor so far?

____Not helpful at all _____ Somewhat helpful _____Neither helpful _____Somewhat helpful _____Very helpful

7. Years working in the school district

____less than one year _____ 1 to 2 years _____2 to 3 years _____over 3 years

8. Total number of years in the education profession

____less than one year _____ 1 to 2 years _____2 to 3 years _____over 3 years

9: For the current school year (2017-2018), please list initials of individual(s) that you have turned to for support in your teaching and learning practices.

Directions: Next to each initial, please indicate whether the person is part of the New Teacher Center program, the position or relationship of the individual, please indicate the amount of time you talk to the individual and how helpful this relationship is as a mentee. Please include if you do turn to your mentor for support. If not, then do not include your mentor. If you do not talk to anyone from the school, write "none" next to number 1. If there is not enough room in the space provided, please use the back of the survey to list additional.

			Circle the number that best reflects how often you talk with the individual						Circle the number that best reflects how helpful this relationship is to you.					
Initials of individual	**Is this person a part of New Teacher Center? Yes (Y)/No (N)**	**Position or relationship of individual to you**	**Once in while**					**Daily**	**Not helpful**					**Very helpful**
1._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
2._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
3._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
4._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
5._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
6._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
7._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
8._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
9._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
10._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
11._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
12._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6

10: For the current school year (2017-2018), which individual(s) from the school have you turned to for emotional support regarding your duties of teaching and learning?

Directions: Please list You may list up to 12 individuals for the question. Next to each initial, whether the person is part of the New Teacher Center program, the position or relationship of the individual, please indicate the amount of time you talk to the individual and how helpful this relationship is in supporting you emotionally. If you do not talk to anyone from the school, write "none" next to number 1. If there is not enough room in the space provided, please use the back of the survey to list additional.

			Circle the number that best reflects how often you talk with the individual						Circle the number that best reflects how important this relationship is to you.					
Initials of individual	**Is this person a part of New Teacher Center? Yes (Y)/No (N)**	**Position or relationship of individual to you**	**Once in while**					**Daily**	**Not helpful**					**Very helpful**
1._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
2._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
3._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
4._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
5._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
6._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
7._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
8._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
9._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
10._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
11._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6
12._____	Y / N	_____	1	2	3	4	5	6	1	2	3	4	5	6

11. Is there anything else you would like to share concerning your experience with the mentoring program in the district? If so, please add that information here.

APPENDIX C

Interview Protocol – Teacher Mentee

Introduction

Hello, my name is Tania Benoiton, and I am conducting this research in partial fulfillment of the requirements of my Ph.D. degree from Oklahoma State University. I am interested in the network relationships between mentors and mentees participating in the New Teacher Center Mentoring Program. I will ask a series of questions focusing on your relationships you have established with other individuals and your perception on the support you have received within the program. I invite you to review the consent form you signed prior to completing the survey. Do you have any questions?

Prior to starting, I am going to tape this interview and will transcribe it later date. The recorded interview or the transcribed information will remain private and will not be shared with anyone at the school building or district. Any information I use in my dissertation will not contain your name or your position. Do I have your consent to record the interview?

Interview Questions

1. What is your current teaching assignment?
2. What is your background in the education sector?
    a. How many years in this district?
    b. How many years at this school?
3. How would you describe your experience as a new teacher in this district? Challenges? Successes?
4. Where do you go for support in your role as a teacher?

5. What is your definition of mentoring?
6. How long have you been involved in the mentoring program and what has your experience been?
7. What is your perception about how this mentoring program has influenced your professional development as a novice teacher?
8. What challenges have you experienced in the mentoring program and how have you addressed these challenges?
9. What kind of support have you received through the mentoring program? Through other resources?
10. What needs do you have that are currently being met? How are they being met?
11. What needs do you have that are not currently being met?
12. Can you describe your experiences with your mentor?
    a. Who contacts whom?
    b. How often do you get together?
13. How has your mentor influenced your teaching practices?
14. How have others influenced your teaching practices?
15. What is your perception about how the mentoring program has influenced the culture of this school? The way teachers interact with each other?
16. Do you have any recommendations for improving this program?
17. Is there anything else you would like to add?
18. Do you mind if I contact you again in case I have additional questions?

Conclusion

Thank you, we have reached the end of the interview. Thank you for your time and patience in answering my questions.

APPENDIX D

Interview Protocol – Teacher Mentor

Introduction

Hello, my name is Tania Benoiton, and I am conducting this research in partial fulfillment of the requirements of my Ph.D. degree from Oklahoma State University. I am interested in the network relationships between mentors and mentees participating in the New Teacher Center Mentoring Program. I will ask a series of questions focusing on your experiences in the mentoring program here at (name of school district). I invite you to review the consent form you signed prior to completing the survey. Do you have any questions?

Prior to starting, I am going to tape this interview and will transcribe it later date. The recorded interview or the transcribed information will remain private and will not be shared with anyone at the school building or district. Any information I use in my dissertation will not contain your name or your position. Do I have your consent to record the interview?

Interview Questions

1. What is your position in the district?
2. Could your elaborate more on your background in the education sector?
    a. How many years in this district?
    b. How many years at this school?
3. What is your definition of mentoring?
4. How long have you been involved in the mentoring program?

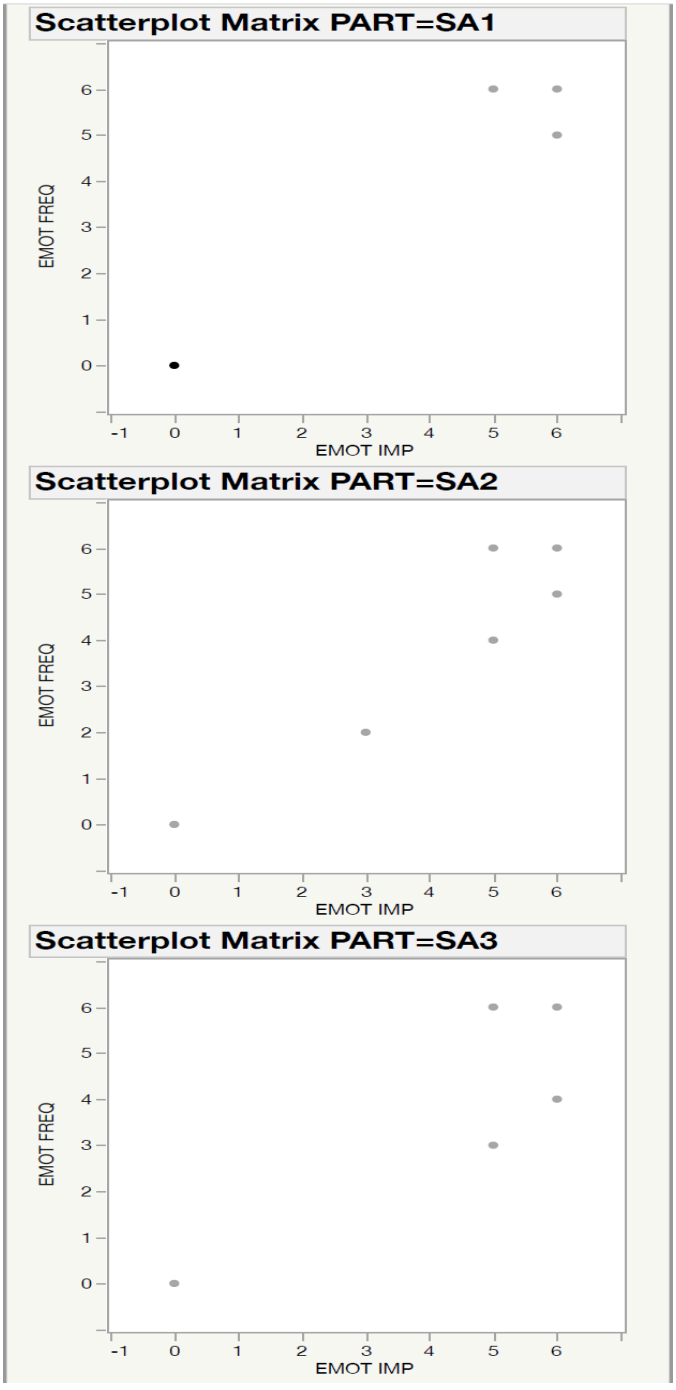
5. Can you please describe your involvement in this program including the length of your involvement?
6. How many mentees do you currently work with?
7. Can you describe your experiences with your mentees?
    a. Who contacts whom?
    b. How often do you get together?
8. What are some limitations/challenges in this program that you have experienced?
    a. What adjustments did you have to make as a result of these challenges?
9. What is your perception about how this program has influenced the success of novice teachers in this building?
10. What is your perception about how this program has influenced the school culture?
11. Could you please describe the relationship that you have with your mentee?
12. How has your experiences from the mentoring program shaped your perception of what it means to be a mentor?
13. What kinds of support do new teachers receive through this mentoring program?
14. How have others influenced your mentoring practices?
15. Do you have any recommendations for improving the NTC program in this district?
16. Is there anything else you would like to add?
17. Do you mind if I contact you again in case I have additional questions?

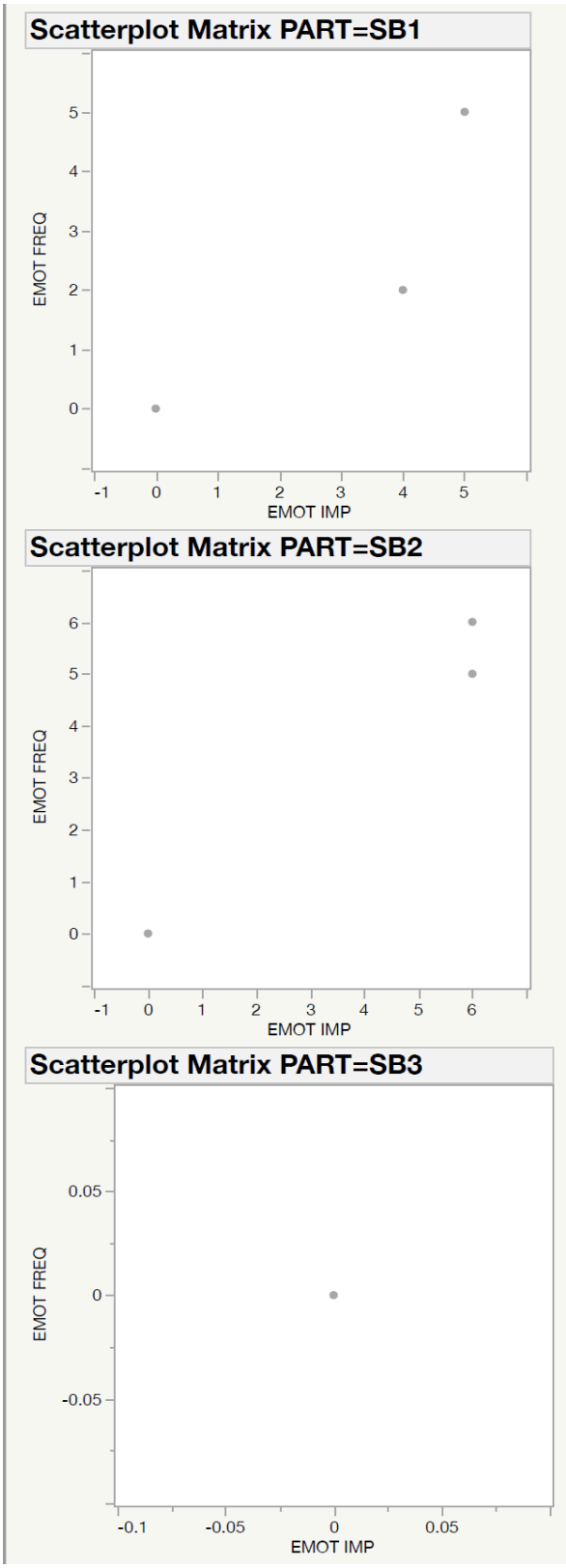
Conclusion

Thank you, we have reached the end of the interview. Thank you for your time and patience in answering my questions.

APPENDIX E

Figure 5: Scatterplot Matrix Emotional Support by Participant

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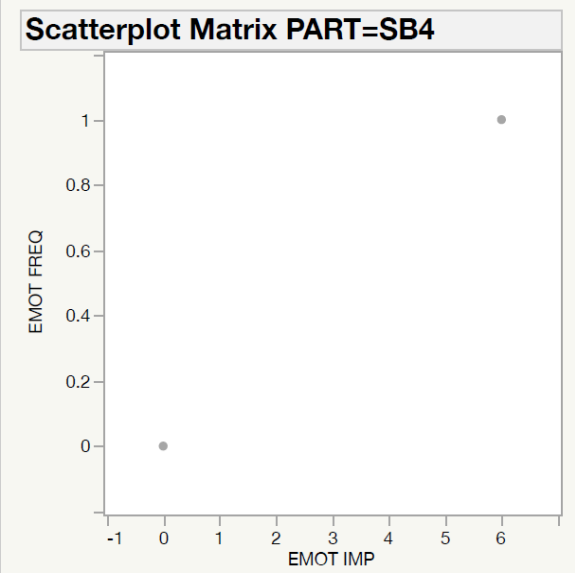
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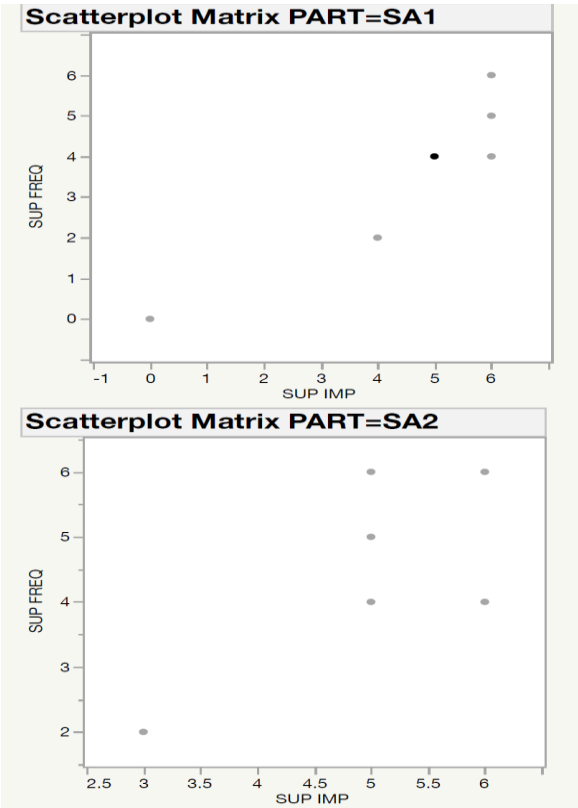
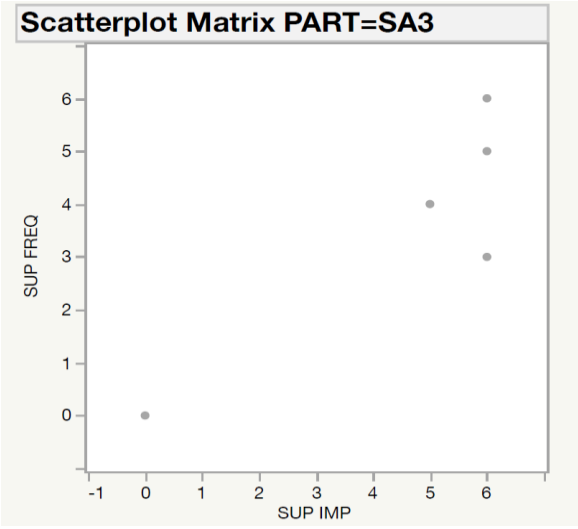
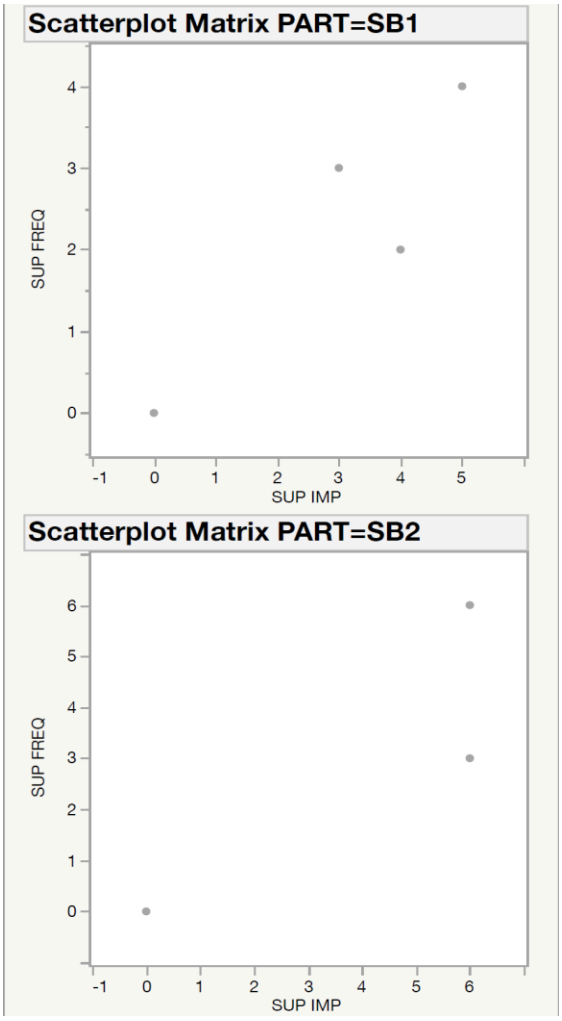
1
2
3
4
5
6
EMOT IMP

APPENDIX F

Figure 6: Scatterplot Matrix Professional Support by Participant



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3
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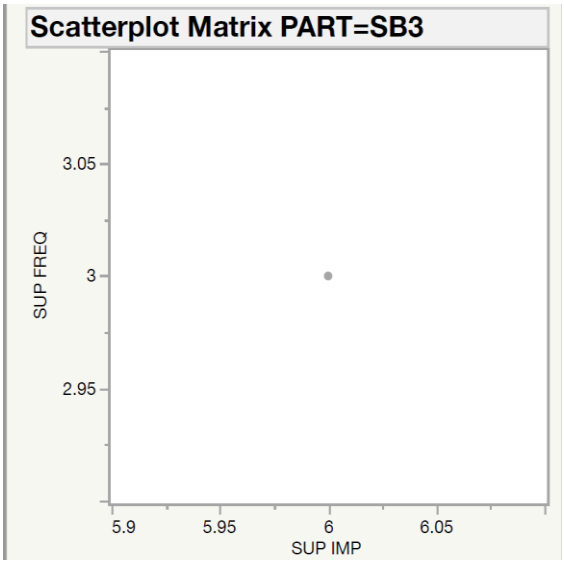
6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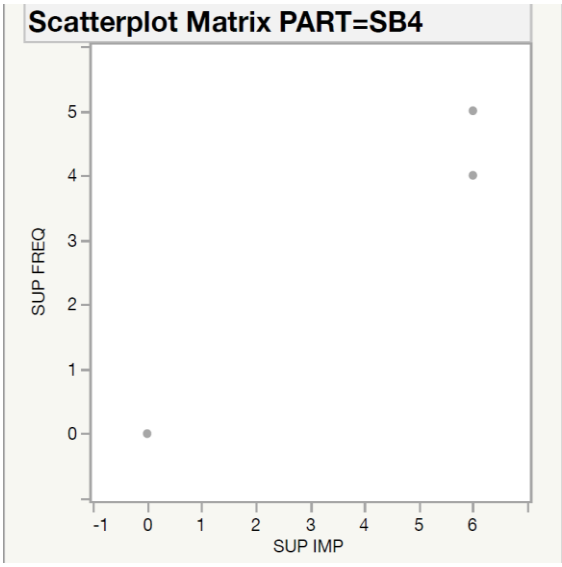
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1
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-1
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1
2
3
4
5
6
SUP IMP

APPENDIX G

Institutional Review Board Approval

Oklahoma State University Institutional Review Board

Date:	Tuesday, January 30, 2018
IRB Application No	ED17146
Proposal Title:	A Social Network Analysis of the New Teacher Center Mentoring Program
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 1/31/2020

Principal Investigator(s):

Tania Benoiton
Stillwater, OK 74078

Katherine Curry
306 Willard
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☐ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Scott Hall (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,

Hugh Crethar, Chair
Institutional Review Board

APPENDIX H

Adult Consent Form - Survey

ADULT CONSENT FORM - SURVEY
OKLAHOMA STATE UNIVERSITY

PROJECT TITLE: A Social Network Analysis of the New Teacher Center Mentoring Program

INVESTIGATORS: Tania Benoiton, Doctoral Candidate, School Administration, Oklahoma State University

PURPOSE: The purpose of this study is to examine the pattern of mentoring relationships embedded in a centralized mentoring program, the New Teacher Center (NTC), at two schools in a large, urban district in the Midwest. This study will seek to explore patterns of relationship networks established in these NTC programs. Understandings sought will include patterns of relationships between actors in the program, the directionality of relationships, and density of relationships across the program at each school site. Additionally, this study will examine participants' perceptions about the resources embedded within the social networks in the program.

PROCEDURES: You will participate in one survey. Questions asked in the survey will relate to the relationship of you (as the novice teacher or mentor) with the novice teacher/mentor. This study will seek a better understanding of relationships that novice teachers and mentors maintain for support/help with instructional practices and examine the affect that network has on your success in teaching. The survey will take approximately 30 minutes to complete.

If you participate, you will also be invited to participate in one live interview. Questions asked during the interview will relate to the relationships of the novice teachers with their mentors within the respective school building. The interview will take place in a private setting agreed upon by you and the researcher. This interview is designed to last approximately 45 to 60 minutes. The interview will be audio recorded and will be transcribed by the researcher.

RISKS OF PARTICIPATION: There are no known risks associated with this project which are greater than those ordinarily encountered in daily life.

BENEFITS OF PARTICIPATION: Upon request, participants will be provided a copy of the research associated with the study. Due to confidentiality, any information that could lead to identification of a participant will not be released with the research.

CONFIDENTIALITY: The records of this study, including but not limited to the completed surveys, taped participant interviews, and the transcription of the interviews, will be kept private. Research records will be stored on a password protected computer in a locked office and only researchers and individuals responsible for research oversight will have access to the records. Any written results will discuss group findings and will not include information that will identify you. Any identifying information will be recorded and the information used in the recoding process will only be accessible to the researcher. No identifying information will be included in the final project. Any information taken for identification will be used solely by the

researcher for the purposes of coding information. It is possible the consent process and data will be observed by research oversight staff responsible for safeguarding the rights and wellbeing of people who participate in research.

COMPENSATION: There is no compensation as a result of participation in this study.

CONTACTS : You may contact the researchers at the following addresses and phone numbers, should you desire to discuss your participation in the study and/or request information about the results of the study:

Tania Benoiton
1700 NW 150th St
Edmond, OK 73013
Cell: 303-956-6107
tania.benoiton@okstate.edu

Dr. Kathy Curry
Faculty Advisor
306 Willard Hall
Stillwater, OK 74078
918-520-9217
katherine.curry@okstate.edu

If you have questions about your rights as a research volunteer, you may contact the IRB Office at:

223 Scott Hall
Stillwater, OK 74078
405-744-3377 or irb@okstate.edu

PARTICIPANT RIGHTS: I understand that my participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time, without penalty.

CONSENT DOCUMENTATION: I have been fully informed about the procedures listed here. I am aware of what I will be asked to do and of the benefits of my participation. I also understand the following statements:
I affirm that I am 18 years of age or older.
I have read and fully understand this consent form. I sign it freely and voluntarily. A copy of this form will be given to me. I hereby give permission for my participation in this study.

_____ _____
Signature of Participant Date

I certify that I have personally explained this document before requesting that the participant sign it.

_____ _____
Signature of Researcher Date

APPENDIX I

Adult Consent Form – Interview

ADULT CONSENT FORM - INTERVIEW
OKLAHOMA STATE UNIVERSITY

PROJECT TITLE: A Social Network Analysis of the New Teacher Center Mentoring Program

INVESTIGATORS: Tania Benoiton, Doctoral Candidate, School Administration, Oklahoma State University

PURPOSE: The purpose of this study is to examine the pattern of mentoring relationships embedded in a centralized mentoring program, the New Teacher Center (NTC), at two schools in a large, urban district in the Midwest. This study will seek to explore patterns of relationship networks established in these NTC programs. Understandings sought will include patterns of relationships between actors in the program, the directionality of relationships, and density of relationships across the program at each school site. Additionally, this study will examine participants' perceptions about the resources embedded within the social networks in the program.

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BENEFITS OF PARTICIPATION: Upon request, participants will be provided a copy of the research associated with the study. Due to confidentiality, any information that could lead to identification of a participant will not be released with the research.

CONFIDENTIALITY: The records of this study, including but not limited to the completed surveys, taped participant interviews, and the transcription of the interviews, will be kept private. Research records will be stored on a password protected computer in a locked office and only researchers and individuals responsible for research oversight will have access to the records. Any written results will discuss group findings and will not include information that will identify you. Any identifying information will be recorded and the information used in the recoding process will only be accessible to the researcher. No identifying information will be included in the final project. Any information taken for identification will be used solely by the researcher for the purposes of coding information. It is possible the consent process and data will be observed by research oversight staff responsible for safeguarding the rights and wellbeing of people who participate in research.

COMPENSATION: There is no compensation as a result of participation in this study.

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Tania Benoiton
1700 NW 150th St
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Cell: 303-956-6107
tania.benoiton@okstate.edu

Dr. Kathy Curry
Faculty Advisor
306 Willard Hall
Stillwater, OK 74078
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I affirm that I am 18 years of age or older.
I have read and fully understand this consent form. I sign it freely and voluntarily. A copy of this form will be given to me. I hereby give permission for my participation in this study.

_____ _____
Signature of Participant Date

I certify that I have personally explained this document before requesting that the participant sign it.

_____ _____
Signature of Researcher Date

VITA

Tania Marie-Cecile Benoiton

Candidate for the Degree of

Doctor of Philosophy

Thesis: A SOCIAL NETWORK ANALYSIS OF THE NEW TEACHER CENTER MENTORING PROGRAM

Major Field: Educational Leadership and Policy Studies

Biographical:

Education:
Completed the requirements for the Doctor of Philosophy in Educational Leadership and Policy Studies at Oklahoma State University, Stillwater, Oklahoma in December, 2018.

Completed the requirements for the Master of Arts in International Studies at University of Denver, Colorado in 2013.

Completed the requirements for the Master of Arts in Social Policy and Administration at University of Nottingham, Nottingham, United Kingdom in 2005.

Completed the requirements for the Bachelor of Laws at University of Nottingham, Nottingham, United Kingdom in 2004.

Experience:
Graduate Research/Teaching Assistant, Oklahoma State University, Stillwater, Oklahoma, 2013-2018
Program Development Intern, Project Education South Sudan, Denver, Colorado, 2012-2013
Technical Director and Compliance Officer, Mayfair Trust Group Limited, Seychelles, 2010
Technical Manager, Mayfair Trust Group Limited, Seychelles, 2008-2009
Corporate Manager, OCRA (Seychelles) Limited, Seychelles, 2005-2008